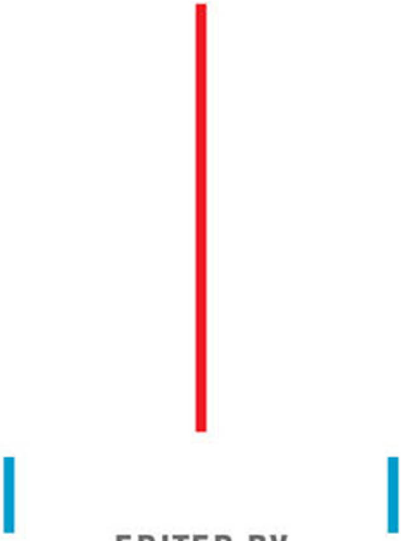
Academic Star Wars

EXCELLENCE INITIATIVES IN GLOBAL PERSPECTIVE



EDITED BY
MARIA YUDKEVICH, PHILIP G. ALTBACH,
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Academic Star Wars

Excellence Initiatives in Global Perspective

edited by Maria Yudkevich, Philip G. Altbach, and Jamil Salmi

The MIT Press
Cambridge, Massachusetts
London, England

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The MIT Press would like to thank the anonymous peer reviewers who provided comments on drafts of this book. The generous work of academic experts is essential for establishing the authority and quality of our publications. We acknowledge with gratitude the contributions of t hese otherwise uncredited readers.

This book was set in Times New Roman by Westchester Publishing Services.

Library of Congress Cataloging-in-Publication Data

Names: Yudkevich, Maria, editor. | Altbach, Philip G., editor. | Salmi, Jamil, editor.
Title: Academic star wars : excellence initiatives in global perspective / edited by Maria Yudkevich, Philip G. Altbach, Jamil Salmi.
Description: Cambridge, Massachusetts : The MIT Press, [2023] | Includes bibliographical references and index.
Identifiers: LCCN 2022059077 (print) | LCCN 2022059078 (ebook) | ISBN 9780262546850 (paperback) | ISBN 9780262376709 (epub) | ISBN 9780262376693 (pdf)
Subjects: LCSH: Education, Higher—Aims and objectives—Case studies. | Universities and colleges—Research—Case studies. | Academic achievement—Case studies. | Education and globalization—Case studies.
Classification: LCC LB2322.2 .A25 2023 (print) | LCC LB2322.2 (ebook) | DDC 378.0072—dc23/eng/20230315
LC record available at https://lccn.loc.gov/2022059077
LC ebook record available at https://lccn.loc.gov/2022059078

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Acknowledgments

This volume is a truly collaborative endeavor. It is the product of a fruitful research collaboration between the Center for Institutional Studies at HSE University in Moscow and the Center for International Higher Education at Boston College. Since 2011, this is the seventh such joint research project, each following a similar methodology of asking some of the best higher education (HE) researchers all over the world to work collaboratively on a set of common themes and methodologies. We are indebted to our team of researchers in nine countries, who not only contributed to the deeper understanding of national cases, but also helped to enrich the research methodology. The COVID-19 pandemic did not allow the expert group to meet in person, but a series of online meetings allowed us to have fruitful discussions and ensure the integrity of the final output. The project was funded and managed by HSE University. We thank Anastasia Byvaltseva and Aleksandr Dmitrienko for their excellent research assistance.

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Introduction

> All happy families are alike, but every unhappy family is unhappy in its own way.
> —Leo Tolstoy, *Anna Karenina*, 1878

This pioneering book focuses on the global phenomenon of academic excellence initiatives (AEIs)—special programs sponsored by governments to improve research universities around the world. These initiatives have provided billions of dollars to top universities and are perhaps the most significant effort to jump-start academic research and higher education (HE) in general over the past half-century. This book analyzes AEIs in nine key countries in Europe and Asia and provides insights into their successes and problems—as well as the broader process of HE reform globally.

This main purpose of this book is to provide a comprehensive analysis of AEIs across the world and to understand their impact on national HE systems. Based on this analysis, the book attempts to provide policy recommendations for national decision-makers and university leaders. The book addresses the following key questions:

- How does the idea of excellence vary across national systems, and what prompted the boost of AEIs all over the world?
- If there is such a thing as a successful AEI, is there a recipe for those who want to launch one, or at least some useful lessons from the experience of others?
- What are the general consequences (both intended and unintended) of these AEIs for participating universities and the rest of the HE system?
- Can one claim that AEIs can have a significant impact on the global standing of national HE systems?
- Do these AEIs represent a sustainable tool for the general development of national HE systems as a whole, and participating universities in particular?

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We realize that, as this is the first comparative study of AEIs, the nature, quality, and completeness of data may vary across our case-study countries. However, we hope that the preliminary lessons of their experience coming out of this book will be relevant to guide national decision-makers and university leaders.

We aimed to achieve a representative overview of AEIs across the world that reflects the variety of initial conditions of national HE systems and the differences in AEI design, scope, and funding. The list of countries chosen for analysis are China, Denmark, France, Germany, Japan, Malaysia, Russia, South Korea, and Taiwan.[1]

The book has three parts. The introductory part draws a comparative picture of various AEIs across the world. Based on the research literature, it summarizes what is already known about the impact that such programs have at the level of individual universities and HE systems in general, as well as how they can affect the distribution of academic powers in the world. The main part of the book is composed of the nine country case studies of key national AEIs, which provide basic information about the goals and foci of the various programs, the support provided, and their results. The final part of the book presents a discussion of the comparative country case analysis, looking at the key dimensions of funding models, governance arrangements, research performance and talent development, and internationalization. The last chapter identifies common features and diverging paths and draws lessons about the relative effectiveness and impact of these AEIs.

Note

1. We are aware that other countries have put in place funding approaches or programs that seek to achieve similar results as an AEI—namely, enhancing the capacity, output, and impact of their research universities—without having all the characteristics of a formal AEI. Two examples worth mentioning in this respect are the Research Excellence Framework in the UK and the Excellence in Research assessment in Australia.

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1

The Context of Academic Excellence Initiatives

Philip G. Altbach, Jamil Salmi, and Maria Yudkevich

In 2013, the Russian government launched the Global Competitiveness Enhancement Program, with the explicit goal of having five universities included among the top 100 in the world. In 2015, China started the Double First-Class University Plan, with the aim of developing its elite universities into world-class institutions by the end of 2050, although the 985 Project, which began in 1998, was likely the country's first specific academic excellence initiative (AEI). In 2019, the Polish government established a new program called the Excellence Initiative—Research Universities.

These examples are among the latest in a series of AEIs launched by a few dozen countries in recent decades with the purpose of establishing, maintaining, or improving world-class research universities. AEIs are state-funded programs that support—organizationally and financially—a limited number of universities. Even though they are different in their design, declared goals, amount of financial support, and number of universities involved, they have several common features. They represent a substantial injection of additional funding by national governments, aimed at upgrading existing universities in an accelerated fashion. The focus has predominantly been on raising the research performance of universities as a way of boosting their international competitiveness and visibility. Finally, the selection of beneficiary universities is usually done on a competitive basis, sometimes with the intervention of an independent jury with national and international members (Salmi 2016).

AEIs, an important and in some cases transformative development in fifteen or more countries in the past three decades, emerged from a rapidly changing global academic environment in the latter years of the twentieth century and the beginning of the twenty-first. As the context for our detailed analysis of key AEIs, it is worth briefly outlining the environment in which these programs emerged—and in which they exist today.

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Only a few countries have undertaken AEIs—we have chosen to highlight nine representative projects in this book. It is likely that more countries will undertake similar initiatives in the coming years to quickly improve their higher education (HE) institutions, and particularly to jump-start or rapidly improve their research universities, stimulated in part by the global rankings, but more important by a perceived need for strong universities to function effectively in the global knowledge economy.

AEIs relate to only a small number of universities, both within countries and globally. Of the estimated 25,000 universities in the world, perhaps 1,200 are research-intensive, and in the cases included in this volume, only a small proportion of the universities within the countries are part of national AEIs.

It is worth mentioning where AEIs have *not* taken place. None of the major Anglophone countries—the US, the UK, Canada, Australia, and New Zealand—have sponsored AEIs, and in several of those countries, public funding for HE has declined. None of the nations in the Global South have undertaken AEIs, although Nigeria has mentioned a plan to have twenty world-class universities by 2020; and elements of India's current large-scale National Education Policy include measures for improving the research university sector, although the implementation of that program is not yet clear. Thus, as of 2022, AEIs remain limited globally.

Rankings

The global academic rankings, which first appeared in 2003 in the form of the pioneering Academic Ranking of World Universities (ARWU, Shanghai ranking), and the *Times Higher Education* (THE) and Quacquarelli Symonds (QS) rankings, which were established later, are featured prominently in this volume since all of the case studies included here were either stimulated by the desire to improve the standing of universities in the rankings, to benchmark universities against top global universities, or both. Because of the focus on rankings, the parameters used by them loom large in the goals and foci of the national AEIs discussed in this volume. In the context of AEIs, "rankings consciousness" is central to many, if not most of them. While many in the academic community are skeptical of the relevance of rankings as a major metric for measuring excellence and the feasibility of improving rankings as the indicator of the success of an AEI, policymakers and the public almost without exception see these rankings as an important (if not the *most* important) sign of success and a justification for allocating resources to AEIs.

The global rankings measure only a limited aspect of academic institutions—mainly research (Hazelkorn and Mihut 2021; Hazelkorn 2015; Yudkevich,

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Altbach, and Rumbley 2016). This is measured primarily on the basis of publications, including their number and impact, funds spent on research, the production of patents and related practical results of research, and several other indicators. In most other areas, including teaching, learning, and community engagement, the rankings either have no means of accurately assessing them, lack consistent data, or use flawed methods from a methodological viewpoint (Yudkevich, Altbach, and Rumbley 2015).

Our own view is that there has been too much emphasis on rankings when shaping AEIs in general, and that these initiatives benefit most when they focus on national and institutional goals and use rankings and other measures only as benchmarks for comparison with other institutions and countries. But there is no question that rankings have been, and continue to be, a significant factor in the thinking of policymakers as they consider raising both the profile and the research performance of their universities.

Globalization

Universities have always been international institutions—Chinese Buddhist scholars studied at Nalanda University in India in 600 CE, and the medieval European universities used Latin as the language of instruction. In the nineteenth century, the modern research university developed in Germany and was quickly adapted by other countries that established similar institutions, most notably in the US and Japan, and later elsewhere as well (Ben-David and Zloczower 1962).

Without exception, universities throughout the world followed the Western, and especially the US, model of organization, with national variations. Even in colonized countries where Western academic models were imposed, in no case was that pattern discarded when independence was achieved (Altbach and Salmi 2021).

As economies and societies became ever more dependent on scientific invention and innovations, research became the core part of the work of an emerging class of research-intensive universities. These institutions educated scientific talent, as well as the professionals, managers, and leaders of increasingly complex and science-based economies.

Economies in the post–World War II period became increasingly intertwined, with trade increasing dramatically and manufacturing, natural resources, financial markets, and supply chains becoming ever more globalized and interdependent. Even the COVID-19 pandemic has exemplified globalization, with both how the pandemic spread and how vaccines were developed using international expertise, to a significant extent due to scientific

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research developed at universities. The principal COVID-19 vaccines were developed through university-based basic research and the application of this research across borders, with close partnerships between academic science and biotech companies. The links between Boston-area universities and the Moderna pharmaceutical company and between Oxford University and AstraZeneca are important examples of the kind of university-industry collaboration that many AEIs seek to foster.

Governments throughout the world increasingly acknowledge the role of academia in support of knowledge-based economies and of basic and applied research in modern societies and their role in globalization. Thus, in the twenty-first century, universities are universally recognized for their role in educating scientists and professionals and producing research for societies that are increasingly part of a global economy. Although globalization is a controversial concept in many countries, it is an inevitable force—and AEIs are a key strategic element of that context.

The Globalization of Science

Knowledge of all kinds, and especially scientific research, have always gone beyond the borders of a single country. When the modern research university was established in Prussia in the early nineteenth century, the scientific discoveries made in those universities and the doctoral level teaching provided were quickly of interest internationally. Americans came to the German universities to study for doctorates and brought the idea of the research university to the US. And when Japan developed its universities, they looked to Germany, and to some extent the US as well. The research produced by these universities was quickly disseminated globally through the new network of scientific journals, international scientific conferences, an expanding research collaboration across borders, and the increasing cross-border mobility of scientists and scholars.

By the end of the twentieth century, science was globalized as never before, which was made possible by the Internet, the widespread use of English as the main language of scientific communication, the ease of international travel, and the expansion in the numbers of postdoctoral and faculty appointments made across borders. The end of the Cold War brought the former Soviet Union and Eastern Europe into the international scientific system. The various programs of the EU integrated the academic systems of EU member-countries as never before—especially in the area of advanced research, as illustrated by the European Universities initiative in 2019. China, after years of isolation during the Cultural Revolution and its then-massive expenditure on building its

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research universities, joined the global science system and is now one of the main producers of scientific publications of all kinds. The number of articles with authors from more than one country has exponentially increased.

Massification

While AEIs are focused exclusively on the small minority of research universities that are at the top of the academic hierarchy, these universities exist in the global context of mass HE. There are approximately 250 million students in postsecondary institutions—up from 200 million in 2000, and with 600 million estimated by 2040. There are more than 25,000 universities worldwide, with immense diversity among them. In most rich countries, well over half the relevant age group attend postsecondary institutions, and in some countries, enrollment rates exceed 75 percent. This is in contrast with the much lower access rates in the poorest parts of the world, with 10 percent of the age cohort participating in much of sub-Saharan Africa and under 50 percent in most of South Asia.

The financial implications of massification have been immense, of course. When universities educated only a small, elite sector of the population, and in most countries had little responsibility for research, governments provided most of the funding for HE. Mass HE was immensely more expensive, of course, and governments were either unwilling or unable to provide the necessary support.

Differentiated HE Systems

One of the important implications of massification, which also affects AEIs, is the emergence of differentiated academic systems in most countries (Altbach, Reisberg, and deWit 2017). Historically, when postsecondary education was limited to a small elite, and in most countries only a small percentage of young people attended universities, there were some traditional universities and a few other postsecondary institutions. In many countries, funding came mainly from the government, although religious organizations also sponsored and funded universities as well. Until the middle of the nineteenth century, research was not part of the university mission. Research as a responsibility of universities started in Germany after the establishment of the University of Berlin in 1818, and slowly expanded to a few other countries, notably the US and Japan, in the following years. In most countries, there was a single university model that served limited purposes and only a small segment of the

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population. As research became part of the academic mission in some countries, existing institutions were in general able to take on new responsibilities.

In the early twentieth century, this arrangement began to change. New academic institutions focusing on research and technology, such as the Massachusetts Institute of Technology (MIT) in the US and Imperial College in the UK, began to emerge. Research became a more important mission of some existing universities, such as so-called land grant universities in the US. Specialized research institutions separate from universities, such as the Max Planck Society in Germany and the Russian Academy of Sciences (RAS), also were established to focus on research.

Different kinds of postsecondary institutions slowly developed as well. Teacher training colleges and academies, specialized art and music schools, medical schools, and other types of institutions were developed to meet specific needs (usually vocational or societal). With few exceptions, these establishments did not have the status of universities and had few, if any, links with them.

In the years following World War II, postsecondary education expanded dramatically, starting in North America and continuing in Europe and other parts of the world. HE ceased to be the preserve of the elite and played an ever-more-important role in educating an expanding middle class in increasingly complex economies and providing a key path to upward mobility in most societies. Thus, academia worldwide not only expanded, but became differentiated into many kinds of institutions serving different purposes and clienteles. Only in a few countries, led by the US, were the various kinds of postsecondary institutions linked in any way.

By the mid-twentieth century, almost all countries had a significant diversity of academic institutions, with many having either formal or informal postsecondary systems, including institutions ranging from "open door," nonselective community colleges, specialized schools providing vocational training, liberal arts colleges, mass access universities, business and management institutes, and (at the top of most systems) research universities. In general, these constituted the most prestigious and selective segment of the HE system, but only a small part of the total. For example, in the US, with 5,300 colleges and universities, there are perhaps 200 research universities. While there is no clear estimate of how many universities worldwide can be considered research intensive—some have estimated that perhaps 1,200 out of a total of 25,000 universities—these clearly are a small minority. AEIs focus only on a small subset of this elite sector of global HE. Nonetheless, research universities are increasingly part of differentiated academic systems—and always standing at the pinnacle of these systems.

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Funding

Massification and complexity have meant that HE has become an immensely expensive undertaking. According to United Nations Educational, Scientific and Cultural Organization (UNESCO) data, governments spend 1.14 trillion USD at purchasing power parity (PPP) annually on postsecondary education worldwide.

The funding of HE has become complicated and diverse. With few exceptions, countries that at one time provided government funding for most of HE cannot afford to take full responsibility for funding. However, global funding patterns vary significantly. In a number of European nations, including Germany and the Scandinavian countries, universities are mostly public and receive most of their funding from the government, but in much of the world, sources of funding are diversified and increasingly come from student tuition fees. Private HE has become the fastest-growing segment of postsecondary education worldwide.

Without question, the amounts, patterns, sources, and trends in HE funding play a central role in the research university sector and in AEIs. Support for AEIs must compete with many other pressing and complex postsecondary needs and thus, where implemented, it reflects a significant governmental commitment to the research mission of key universities and the concept of world-class universities.

Mobility and Internationalization

In the post–World War II era, international academic mobility, and more broadly the internationalization of teaching and research, have become key elements of universities. Among the stated goals of almost all the AEIs analyzed in this volume, internationalization is a key element. There are more than five million globally mobile students. There are no accurate statistics about the proportion of graduate students, but the number is high. In addition, there are many thousands of globally mobile postdocs, many of whom remain in the countries in which they do their postdoctoral assignment. Growing numbers of faculty members and researchers are employed outside their home countries. An examination of Nobel Prize winners shows that top scientists and scholars are highly mobile, with many Nobelists having studied outside their home countries and often being employed in yet another country.

Internationalization has two main aspects. The most relevant for AEIs are the internationalization of research through jointly authored articles and research projects and the mobility of graduate students, professors, and

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researchers. In all these areas, the use of international metrics has dramatically increased in the past half-century and continues to grow. These are all signs of the internationalization of science and scholarship, and thus it is not surprising that AEIs everywhere have stressed the importance of internationalization.

What Is Known about AEIs

Growing evidence suggests that AEIs have had a substantial impact on the performance of beneficiary universities, increasing their efficiency, research output, competitiveness, and global visibility (Civera et al. 2020; Shin 2009; Matveeva, Sterligov, and Yudkevich 2021). They also affect the allocation and concentration of talent—faculty and students alike. At the same time, the impact often goes far beyond the group of participating universities and has a positive effect on other universities and national research systems in general.

While studies report on the positive impact of AEIs, some less favorable side effects have also emerged. For example, it is well documented that the short-term goals associated with some programs force universities to concentrate on fast-to-publish areas and journals and redirect their priorities and disciplinary profiles to better fit particular global rankings. Experts also argue that under some circumstances, such programs may have a "vacuum cleaner" effect, with the risk that the reallocation and concentration of resources in a small number of institutions will starve the rest of the national HE system. Programs often exacerbate inequalities that already exist in academic systems and may orient not only universities supported by AEIs, but also other academic institutions toward goals that aim at ranking improvement levels rather than measuring real excellence in the quality of teaching, learning, and research. International academic norms may be forced on universities at the expense of national needs. Often, the social sciences and humanities (SSH) are deemphasized or entirely forgotten. In many cases, teaching quality, community involvement, and social inclusiveness are not considered as important goals. In short, there may be indirect costs beyond the massive financial investments being made.

Conclusion

AEIs take place in a complex and rapidly changing global economy and academic environment. These two elements are inextricably linked—the economy is increasingly based on science and technology, and the research-intensive universities contribute the discoveries and innovations that make the economy flourish, while educating the researchers and academics who make science and innovation possible. They educate the top talent and are the most

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internationalized academic institutions. They are at the pinnacle of increasingly diversified and complex academic systems.

For this reason, many countries are eager to have one or more world-class research universities, which are seen as central to the global knowledge economy and the production and dissemination of new knowledge. While AEIs are an innovative approach to ensuring that universities have the resources needed to do their best work and make their maximum contributions, this relatively new phenomenon has hardly been studied and evaluated from an international perspective. We hope that our book will contribute to a better understanding of what AEIs are, how they operate, and how effective they have been in promoting the creation of world-class research universities.

As analyzed in this volume, there are many approaches and policies relating to AEIs. Some are on a large scale and have expended billions of dollars. Others have been much more modest. Some have had a limited scope, while others have been aimed at entire academic systems. And some have been more successful than others. What is common for all programs is their embeddedness into the social and political context of the corresponding countries. Any substantial changes in institutions and politics would necessarily be reflected in HE policies, especially in countries with large public HE sectors.

This book was written prior to the war in Ukraine, and thus it does not reflect the new realities for HE, especially in Russia. However, one can anticipate these changes to be significant, affecting both HE systems in general and their top segments in particular.

References

Altbach, Philip G., and Jamil Salmi. 2021. Re-examine Western universities' pasts, but not their academic values. *Times Higher Education*, September 2, 2021.

Altbach, Philip G., Liz Reisberg, and Hans deWit, eds. 2017. *Responding to massification: Differentiation in postsecondary education worldwide*. Rotterdam, Netherlands: Sense Publishers.

Ben-David, Joseph, and Awraham Zloczower. 1962. Universities and academic systems in modern societies. *European Journal of Sociology* 3: 45–84.

Civera, Alice, Erik E. Lehmann, Stefano Paleari, and Sarah A. E. Stockinger. 2020. Higher education policy: Why hope for quality when rewarding quantity? *Research Policy* 49 (8): 104083.

Hazelkorn, Ellen. 2015. *Rankings and the reshaping of higher education: The battle for world-class excellence*. Basingstoke, UK: Palgrave Macmillan.

Hazelkorn, Ellen, and Georgiana Mihut, eds. 2021. *Research handbook on university rankings: History, methodology, influence and impact*. Cheltenham, UK: Edward Elgar.

Matveeva, Nataliya, Ivan Sterligov, and Maria Yudkevich. 2021. The effect of Russian University Excellence Initiative on publications and collaboration patterns. *Journal of Informetrics* 15 (1): 101110.

Salmi, Jamil. 2016. Excellence strategies and the creation of world-class universities. In *Global rankings and the geopolitics of higher education: Understanding the influence and impact of*

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rankings on higher education, policy and society, edited by Ellen Hazelkorn, 13–48. London: Routledge.

Shin, Jung Cheol. 2009. Building world-class research university: The Brain Korea 21 project. *Higher Education* 58 (5): 669–688.

Yudkevich, Maria, Philip G. Altbach, and Laura E. Rumbley, eds. 2016. *The global academic rankings game: Changing institutional policy, practice, and academic life*. New York: Routledge.

Yudkevich, Maria, Philip G. Altbach, and Laura E. Rumbey. 2015. Global academic rankings: The "Olympic Games" of higher education. *Prospects* 45: 411–419.

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2

Academic Excellence Initiatives: The Case of China

Rui Yang

Introduction and Background

Over the past several decades, some national governments, such as those in China, Denmark, France, Germany, Japan, Russia, South Korea, and Spain, have launched academic excellence initiatives (AEIs) to accelerate the building of world-class universities by injecting a large amount of additional funding into their university sectors. This keen interest in establishing world-class universities has become an obsession across the world, especially in East Asia and the Nordic countries (Salmi 2016). Despite their differing social, political, and economic situations, the initiatives in these countries generally feature competitive funding schemes, international benchmarking, and governance reforms at the government and institution levels. With the consequential global ranking mania, excessive emphasis on university branding, and the attending threats to the traditional mission of public good of the university, the actual social and educational effects of such initiatives need to be observed much more closely.

China has been the greatest contributor to such a discourse. Its initiatives have been the most extraordinary in terms of both scale and intensity. As the first nation with most investment in a major AEI, China has been the largest (and arguably the most successful) case. Having made their presence felt and sustained their improvement in the world rankings, a few Chinese national flagship universities regularly appear in the top echelons, and the higher education (HE) system continues to improve. The quality outcomes of its extraordinary AEIs have greatly promoted the suitability and capacity of China's HE sector. China's global influence in HE, research, and innovation is expanding so fast that some people have been talking about it having global intellectual dominance. With such stellar recent accomplishments, China is becoming increasingly confident about eroding Western hegemony in HE and

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developing its intellectual power to take the lead in knowledge production and research impact (Jain 2021).

By the 2020s, international media coverage and academic studies continue to report China's rise as a global power in HE. However, understanding the factors behind its grand strategy often proves to be a daunting task for Western analysts. This is also the case with the study of China's HE development. Ever since the "century of humiliation," a period of intervention and subjugation of the Qing dynasty and the Republic of China by Western powers and Japan between 1839 and 1949, the Chinese nation has always prioritized its pursuit of "wealth and power," as opposed to the more typical Confucian tradition of "rule of the virtuous" (Schell and Delury 2013). This discourse of national humiliation shows how China's insecurities are not just material—a matter of catching up to the West militarily and economically—but also symbolic. For instance, one of the goals of Chinese foreign policy has been to cleanse its national humiliation (Callahan 2004). A fervent desire to catch up with the West since the nineteenth century has dominated China's policy discourse, reflected in its pursuit of internationally competitive universities that would have equal standing with their peers in North America and Europe. This is the historical context in which China's quest for world-class universities needs to be observed and understood.

Another major contextual factor for China's university development is the fact that Western academic models have been adopted by national HE systems around the globe. Echoing the experiences of other non-Western societies, China's peripheral position within the global system was a precondition for its HE development, forcing the system to reevaluate nearly everything it did on all levels, positive and negative. With such a precondition, China's HE also needed to redefine the meanings and implications of a variety of issues, many of which are fundamental for the system's healthy and sustainable development. These issues include patterns of institutional governance, the ethos of academia, the rhythm of academic life, ideas about science, procedures of examination and assessment, in some cases the language of instruction, and many other aspects of HE. The criticality of such a precondition has not always been fully recognized. Many, both inside and outside the system, have often failed to realize that it redefines how to understand and fulfill HE ideals realistically in China today (Yang 2022).

As an integrated part of its learning from the West, China's quest for world-class universities necessarily touches on the interaction between Chinese and Western cultural values, a centurylong mission that is yet to be accomplished. The impact of the West has been significant from the beginning. Aiming at meeting local needs, there has been considerable interplay between foreign

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influences and Chinese realities. Strong Chinese intellectual traditions that were entrenched prior to Western contact continue to dominate many aspects of society, which has led to constant tension and conflict with the underlying values of Western academic models (Altbach 1989). For China, as a latecomer to modern university development, managing local, national, and global relations has proven extremely difficult and vitally important. This is especially true in the present world, which features unprecedented human connectivity. China has aimed to strategically strengthen its national competitiveness while laying the foundation for long-term development.

China's modern universities were established based on Western experiences (Kirby 2014). With the aforementioned precondition, HE development means becoming similar to Western systems and institutions, especially in terms of infrastructure, standards, measures, and organizational behaviors. Within the relatively short period of one and a half centuries, China has learned from the West remarkably well to establish its modern HE system and institutions, with a strong capacity for research and innovation and fast growth in scientific output. In 2020, 41.8 million students were enrolled in Chinese HE, making it the largest academic system in the world, with 2,738 regular public HE institutions and a gross enrollment rate of 54.4 percent. Postgraduate admissions reached 1.1 million, with 116,000 and 990,500 at the doctoral and master's levels, respectively; and a national enrollment of 3.14 million. There were 1.83 million full-time teachers, with a student-teacher ratio of 18.37:1. A total of 771 private HE institutions hosted 2,556 master's students and 7.91 million undergraduate and associate degree students (Ministry of Education 2021).

Since the reform and opening up of the Chinese economy in 1978 following the devastating Cultural Revolution (1966–1976), establishing closer links between HE and the market has been a prominent goal, as stipulated by the Higher Education Law (Article 13, Chapter I). HE institutions have become increasingly corporatized (Eun, Lee, and Wu 2006), and governance reforms were implemented to loosen the long-standing tight control by the central government in many domains, including student admissions, the establishment of academic programs, teaching affairs, research and development (R&D), service to the local community, international exchange and cooperation, internal governance restructuring, and staff, finance, and property management. Within institutions, the president, faculties, and departments have gained much greater autonomy in mobilizing resources and making institutional decisions on matters relating to teaching, research, and staff, although the government continues to control key aspects (Cao and Yang 2019), such as the heavy political and ideological imprints on university curricula and culture, the appointment of presidents and party secretaries, and national policy orders and funding

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schemes (Han and Xu 2019). Meanwhile, the government has diversified educational services to encourage the nonstate sector to establish and run tertiary institutions, with more power devolved from central to local authorities, communities, and nonstate actors so that they can take more responsibility for educational provision, financing, and regulation.

Thanks to its heavy investment in R&D, China has made serious technological advances over the past several decades (Lei et al. 2019) and become a major contributor to science and technology. It now employs an increasingly large labor force of scientists and engineers with relatively high wages and produces more science and engineering degrees than the US at all levels (Xie, Zhang, and Lai 2014). It leads the world in patent applications, with 40 percent of the global total, more than double that of the US and four times larger than that of Japan. In 2016, the number of scientific publications by Chinese researchers outnumbered those from the US for the first time: 426,000 versus 409,000. In some fields, China has started to set the pace for others to follow (Ball 2018). While remaining second to the US in the number of papers published in leading science journals, China was the world's top producer of high-quality papers in 2019 in engineering technology, chemistry, environmental and ecological sciences, computer sciences, materials science, agricultural science, physics, and mathematics (Zhang 2020). Setting a goal to become a global technological leader, China has built the largest science system in the world (Marginson 2021). The new strategic thinking and actions in its second Medium- and Long-term Science and Technology Plan (2021–2035) will make it an even more important player in the global research and innovation landscape. In March 2021, China unveiled an ambitious road map for transforming into a world-leading power by 2035, with strategy outlines of how to become a major global innovation engine (Mai 2021).

This decades-long progress has formed the basis for further ambitions. China aspires to elevate some of its universities to world-class status as a key to promote economic development and technological innovation (Liu, Turner, and Jing 2019). Striving to have world-class universities has been designated as a key policy position to foster nation-building (Cao 2021). Noting that the country's innovation system requires strong support from first-class HE institutions, the government emphasizes the need to build world-class universities with Chinese characteristics to serve national rejuvenation. Committed to strategically promoting some universities with the potential to rapidly enter the world-class league, the government has invested heavily and focally. Major policies included Project 211 and Project 985 in the 1990s (Yang and Welch 2011) and the Double First-Class University Plan in 2015, with substantial resources allocated by central and provincial governments (Peters and Basley 2018).

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So far, there has been no specific record of the actual amount of China's spending overall on building world-class universities. In an analysis of thirty-six universities that were selected by the initiative, Mao and Wu (2020, 60) estimate that China's expenditure would reach 40 billion RMB (9.57 billion USD) during the thirteenth Five-Year Plan (2016–2020). Considering China's start in November 1995, which was nearly the end of the eighth Five-Year Plan, the initiative has spanned six Five-Year Plans. China's overall spending on its quest for world-class universities could easily go over 200 billion RMB (47.85 billion USD). While the investment would have been much less substantial during earlier stages, recent expenditures are increasing quickly. For instance, the overall expenditure on the thirty-six institutions included by Mao and Wu (2020) increased from 161.33 billion RMB (38.59 billion USD) in 2015 to 240.06 billion RMB (57.43 billion USD). Local jurisdictions, the industry, and HE institutions have been participating in such exercises enthusiastically, often with large amounts of financial commitment. The fact that the quest for world-class status by universities has been able to win so much funding from governments and industry demonstrates strong societal support and the capacity for state mobilization. However, the collection of statistics has been absent. Although we can make only a rough estimate, China's overall spending on establishing world-class universities is certainly astronomical.

In a broad sense, many of China's policies for HE development can be seen as AEIs. In comparison, its recent three major initiatives are most prominent. They are Project 211, Project 985, and the current Double First-Class University Plan (figure 2.1). Against such a backdrop, this chapter elucidates the trajectory of China's world-class university project, with some critical reflections on the policy.

The Chinese Experience

Having world-class universities has long been a dream of the Chinese people, from the political and educational elites to the populace. However, the recent initiative for building world-class universities in China has been most directly based on the needs of the knowledge economy. As noted previously, the move is also psychological and emotional as a sign of national pride and China's international standing. Moreover, it is because that realistically fulfilling the dream appears to be increasingly likely as China grows further into a global power and its HE system transforms from an elite to a mass form. With increasingly intensified global competition in science and technology, the Chinese government has been proactively promoting some of China's premier universities in their quest for world-class status.

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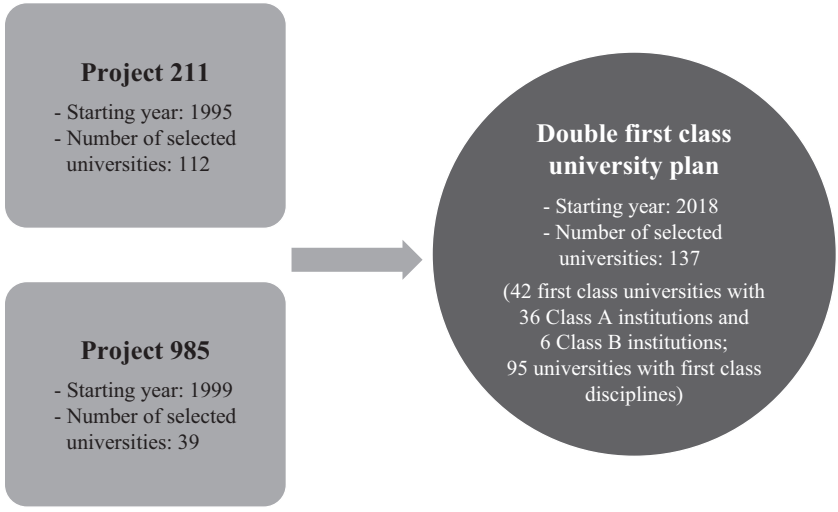
Project 211
- Starting year: 1995
- Number of selected universities: 112
Project 985
- Starting year: 1999
- Number of selected universities: 39
Double first class university plan
- Starting year: 2018
- Number of selected universities: 137
(42 first class universities with 36 Class A institutions and 6 Class B institutions; 95 universities with first class disciplines)

Figure 2.1
Summary of China's AEIs.

Time Period

The official start of China's current initiative for world-class universities as a national policy priority could be the announcement by President Jiang Zemin on May 4, 1998, that China must have several world-class universities of an internationally advanced level. After the official announcement, building world-class universities quickly became a national policy priority, and actions started at the ministerial, provincial, and institutional levels. However, as required by nation-building in the context of the knowledge economy and global competition, establishing universities of world-class quality already had become a strategic objective of both the government and universities by the mid-1990s. Some of China's flagship universities began to launch their own plans to transform themselves into world-class institutions. Furthermore, the initiative for world-class universities is a continuation of China's educational reforms during the post-Mao era to shift economic construction to a track depending on the advancement of science and technology and the improvement of the quality of workers. While the movement started in the 1990s, the pace of the initiative has been accelerating since the 2000s. Specific national policies include Project 211 and Project 985 in the 1990s and the ongoing Double First-Class University Plan, which was launched in 2015.

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Main Goals and Key Features

As noted previously, national rejuvenation is the ultimate goal of the reform and development since China's reentry into the international community after Mao Zedong. The world-class university movement is part of much larger efforts. In February 1993, the Chinese government issued the "Outline for Educational Reform and Development in China" to concentrate national resources at the central and provincial levels to uplift a total of around 100 key universities and a group of key academic disciplines and specialties to international levels in terms of their quality in teaching, research, and management by the early 2000s. In May 1995, the central government promulgated the "Decision to Speed up the Advancement of Science and Technology" to implement a national strategy for revitalizing China through developing science and education. Against such a backdrop, the State Council launched Project 211 in 1995 to strengthen about 100 institutions of HE and key disciplinary areas as a national priority for the twenty-first century. The name for the project comes from an abbreviation of the slogan "In Preparation for the 21st Century, Successfully Managing 100 Universities." Project 211 was included in the ninth Five-Year Plan (1996–2000) as the only national key construction program in the education sector. By the end of its first phase in 2000, the central government alone had committed over 2 billion USD (Li 2004, 17). By 2008, China had some 116 institutions of HE (about 6 percent) designated as Project 211 institutions for having met certain scientific, technical, and human resource (HR) standards and offering advanced degree programs.

It is no surprise that the earliest and most direct effect of Project 211 was on the physical and material aspects of China's HE sector, with infrastructure and equipment being greatly improved almost immediately in the chosen institutions in the 1990s. Substantial improvement in the quality of teaching, research, and administration took much longer to become evident, mainly after the 2000s, with fast-growing domestic and international research output. While Project 211 was ongoing, the Chinese government decided to invest more focally in a handful of universities aiming at the global cutting edge. In the Chinese political context, President Jiang Zemin's declaration in his speech at a ceremony to celebrate the centenary of Peking University on May 4, 1998, that China must have several top world universities was a strong catalysis for the initiatives. In response to Jiang's speech, the Ministry of Education promulgated the "Action Plan to Vitalize Education in the 21st Century" in late 1998. The government then launched Project 985 and decided to select a small group of China's premier universities that already enjoyed good resources, conditions, and infrastructure to invest in further for them to become world class

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within two decades. Therefore, Project 211 and Project 985 had an extended period of overlap.

With its first batch of thirty-three institutions selected from Project 211 universities, Project 985 was much more selective, although it continued to be part of China's overall effort to build a world-class HE system and world-class universities. According to the Ministry of Education, the second phase of the scheme was designated to consolidate the results that had been achieved and the foundations laid in the first phase; to explore rigorous ways and means to build a modern university system by reforming and developing China's HE administration; to cultivate young talent and attract world-class academic leaders, whether individually or in groups, and encourage them to come and go of their own accord, so as to hasten and strengthen the development of academic and research fields where China is leading the world; to build national science-technology innovation platforms and national hubs for innovation in human and social sciences as part of a national innovation system; and to hasten the emergence of world-class academic programs and the optimization of the composition of these programs.

Both Project 211 and Project 985 strongly encouraged provincial governments to join the central government in investing heavily in the focused construction plans for world-class universities. Realizing the significance of world-class universities for local economic and social development, China's provincial governments responded enthusiastically. The central government spent more than 18.63 billion RMB (4.46 billion USD) and 18.75 billion RMB (4.49 billion USD) on Project 211 during the ninth and tenth Five-Year Plans, respectively. Similarly, around 14.2 billion RMB (3.39 billion USD) and 19.1 billion RMB (4.57 billion USD) were spent on the first and second phases of Project 985, respectively (Zhang 2010). The investment from provincial governments and industry has almost matched that of the central government. For instance, Project 985 received a total of 55.4 billion RMB (13.25 billion USD) from the central government and 35.1 billion RMB (8.4 billion USD) of funding from provincial governments.

The financial commitment to the ongoing Double First-Class University Plan is far more extraordinary. While the actual amount is to be revealed in the future, provincial and municipal governments have already committed 84 billion RMB (20.1 billion USD) to the plan. For example, Beijing and Shanghai are investing 10 billion RMB (2.39 billion USD) and 3.6 billion RMB (0.86 billion USD), respectively, on building high-end academic disciplines; Guangdong and Shandong have announced 30 billion RMB (7.18 billion USD) and 5 billion RMB (1.19 billion USD), respectively, for the plan so far; Hunan spent 1.5 billion RMB (0.36 billion USD) annually on the plan; for the next five years,

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Jilin has promised 1.5 billion RMB (0.36 billion USD); Henan plans to spend 3.1 billion RMB (0.74 billion USD) over the next ten years; and Hebei has committed half a billion RMB (0.12 billion USD) annually for five years. Other promises include 7 billion RMB (1.67 billion USD) from Anhui, 4 billion RMB (0.96 billion USD) from Jiangxi, 1.5 billion RMB (0.36 billion USD) from Fujian, 1.2 billion RMB (0.29 billion USD) from Shaanxi, and half a billion RMB (0.12 billion USD) from Guizhou (National People's University Photocopy of Newspapers and Periodicals 2018).

The Principles and Process for Selecting Participating Universities

As noted here, the numbers 21 and 1 in the "Project 211" title come from the abbreviation of the twenty-first century and approximately 100 universities. To be included in Project 211, institutions needed to meet scientific, technical, and HR standards and offer advanced degree programs. Selection was based on the infrastructure and the actual capacity of the institutions at the time, with some consideration of geographical and disciplinary balance. Altogether, 112 universities were selected in Project 211. During the ninth Five-Year Plan, the central government endorsed 99 universities to be developed under Project 211. In addition, 602 disciplinary programs were selected to develop key fields of study. A total of 10.894 billion RMB (2.61 billion USD) was set aside for these purposes by both the central and local governments. From China's over 1,700 regular institutions of HE at that time, around 6 percent were selected by Project 211. They took on the responsibility of training four-fifths of the doctoral students, two-thirds of the graduate students, half of the international students, and one-third of the undergraduates. They offered 85 percent of China's key subjects; held 96 percent of the national key laboratories; and utilized 70 percent of scientific research funding.

While Project 211 aimed to improve the quality of over 100 of China's HE institutions, Project 985 targeted a few top universities. Therefore, compared with the earlier project, Project 985 had a narrower policy. At first, Peking University and Tsinghua University were handpicked by the central government to be developed into world-class institutions. The two universities each received 1.8 billion RMB (0.43 billion USD) in the first round of special Project 985 funding for three successive years beginning in 1999. This sum of extra money received by the two universities drew attention from other key universities, which also asked to join Project 985. From July to November 1999, another seven universities joined the scheme: the University of Science and Technology of China, Fudan University, Shanghai Jiao Tong University, Nanjing University, Xi'an Jiao Tong University, Zhejiang University, and Harbin Institute of Technology. This list was later extended. By 2006, a total of thirty-seven

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universities had been included in Project 985. Except for Peking and Tsinghua, all the other universities were awarded special funds by the central government and the local government where they were located. For example, Fudan, Zhejiang, and Nanjing universities received 1.2 billion RMB (0.29 billion USD) each in the first phase of the scheme.

Conceived in 2015, the Chinese government released the World First-Class University and First-Class Academic Discipline Construction plans, known in a combined way as the Double First-Class University Plan. Replacing Projects 985 and 211, it runs on a five-year cycle and aims to create numerous world-class universities and disciplines by the end of 2050. While the overall program was passed in August 2015, the "Implementation Measures to Coordinate Development of First-Class Universities and First-Class Disciplines Construction" was released in January 2017, providing details of the initiative. The full list of the participating institutions and disciplines was released in September 2017 jointly by the Ministry of Education, the Ministry of Finance, and the National Development and Reform Commission. It first listed the names of forty-two universities that had been identified as having the potential to develop into world-class institutions, including thirty-six universities categorized as type A (already well on the way to being world class), six universities as type B (considered to have the potential to be world class), and ninety-five universities with first-class disciplines. It then listed 465 disciplines from the universities (including the group of forty-two) that were identified as having the potential to become world-class. The list of forty-two universities includes all thirty-nine Project 985 universities and three Project 211 universities: Zhengzhou University in Henan, Yunnan University, and Xinjiang University. The discipline development list is composed mainly of former Project 985 and Project 211 universities, with an additional twenty-five non-Project 211 universities having strengths in particular fields.

In comparison with Projects 985 and 211, the Double First-Class University Plan sets its goals more clearly, with emphases on universities and disciplines. It deliberately covers every province and region in China, giving a much broader geographical spread. This preferential policy toward regions is designed to help achieve the nation's educational development goal of having more balanced and equitable education for all. However, the majority of disciplines to be developed are still clustered in major cosmopolitan areas in the eastern regions of China. Beijing topped the chart with 162 disciplines, followed by Shanghai with 57 and Jiangsu with 43. These three provinces/municipalities together have more than half of the total disciplines to be developed. Twelve provinces each have only one university listed, most of which are in the Western regions. Of the selected institutions (roughly 4.5 percent of the national

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total), only twelve have more than ten first-rate disciplines, and seventy-seven have only one discipline listed. Peking University and Tsinghua University, both located in Beijing, are the two giants, with forty-one and thirty-four first-class disciplines, respectively.

The fundamental goal of China's project-based excellence initiatives is to elevate some Chinese universities to the world-class level. The initiatives are thus designed as merit-based to assist the nation's best to become even better. In principle, the selection and evaluation of participating universities are administrated by the Ministry of Education; and the actual exercise is organized by the Higher Education Evaluation Center, which is an administrative body under the auspices of the ministry. Based on the third-party principle, the center invites Chinese and international experts to conduct the evaluation, which is designed as a five-year rolling plan. The focus is on three main dimensions of an institution's operation: overall current capacity, recent improvement, and sustainable future development. The ministry has gradually developed a dynamic monitoring system comprising a variety of indicators over the years covering talent training, teacher development, disciplinary growth, research and innovation, social services, cultural construction, and international engagement. The exercise generally comprises four stages: forming a team of experts, setting discipline-based criteria, reporting the results to central ministries, and decisions by the central government (*People's Daily* 2017). For the latest Double First-Class University Plan, the final evaluation report does not rank institutions. Instead, comparisons are made with their peers in the same categories with recommendations. The plan differs from Projects 985 and 211, in that each participating university is required to have an international benchmark institution. For example, Tsinghua University is assessed against the Massachusetts Institute of Technology (MIT) (*China Science Daily* 2020).

Among all the countries with AEIs, China plays arguably the most overwhelmingly dominant government role in deciding which institutions are selected. While this is a feature of all China's AEIs, especially at the national level, some operating differences exist among them. Project 985 received the most intervention from the central government (Bao, Chen, and Wan 2016), followed by Project 211. It is fair to point out that the Double First-Class University Plan has made some improvement in this aspect. As the Minister for Education stressed, the plan selects and evaluates participating institutions based on "competitive selection, expert evaluation, [and] government assessment" (Chen 2017). The institutions are chosen by an independent committee after a process of peer competition, expert review, and government evaluation. The plan introduces a competition mechanism in which underperforming

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universities could be disqualified from the list, while well-performing non-listed universities could be included in the next round of evaluation. Much emphasis has been placed on such an elimination mechanism, and the inclusion of participating universities is adjusted every five years. The mechanism was proved by the new list of participating institutions of the second round of the plan announced on February 14, 2022, by the Ministry of Education. All of the seven newly included universities are regional (Wang 2022). The plan also tends to focus increasingly more on disciplines than universities and encourages institutions to explore their own development models.

Governance and Monitoring Instruments

China's central government has always been the primary power behind reform and development. Reflecting China's policy-making in every social sector, the formation of the policy of building world-class universities demonstrates once again the dominant role of government. It is interesting and important to note that building a few first-rate universities in China was the pet policy of Jiang Zemin, the former president and party secretary general. By the 1990s, such AEIs had all been devised, implemented, and assessed by the central government. They were always project-based, divided into stages, with governmental commitments of human and financial resources. While most changes are government-driven, in China's various AEIs, there have been constant modifications to approaches employed by the government, shifting from direct financial support to the selected universities to requiring them to submit proposals to compete for support based on their performance. The government-led behaviors need to be understood in the context of China's highly centralized mode of governance, with universities functioning as agencies of the government. Meanwhile, administrative power also reigns supreme within universities. Such strong coordination between the government and universities is the primary reason for China's rapid success, while it also potentially leads institutions to overrely on the state rather than taking the initiative.

The notion of "world-class universities" is often believed to be related roughly to the international university rankings (Deem, Mok, and Lucas 2008). Previously, there was little that could be conveniently employed as key performance indicators (KPIs) for world-class status. Since the 2000s, global rankings have generally been used to evaluate the advantages and disadvantages of organizations and individual academics, as well as the basis for funding allocation and rewards or punishments (Holmes 2006). The Academic Ranking of World Universities (ARWU), established in 2003 by Shanghai Jiao Tong University, was the earliest global ranking of universities. Since then, there have been a number of other global ranking schemes. Although never officially

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acknowledged, China has been using global rankings of universities as KPIs of world-class universities. China treats US and UK best research universities as examples of world-class universities, using them as development models to be imitated and learned from by Chinese universities.

It is interesting to note that ARWU was the direct yet unexpected result of China's world-class university building. This is important, as it evidently shows China's strategy for catching up with modern university development. Answering the call for world-class universities, researchers at Shanghai Jiao Tong University undertook a project to find out what a world-class university looks like and what KPIs are used to identify strategies for Chinese universities—and particularly for their own institutions—to gain world-class status. Consequently, a number of KPIs were created to measure how much Chinese universities lagged. This work gave rise to ARWU. Therefore, although appearing almost entirely Western in terms of its indicators, the Shanghai-based ranking system was created to serve China's purpose, specifically identifying KPIs. China's strategic use of KPIs demonstrates that even if rankings are monsters, they may be tamed to serve good purposes. This is an important reminder because many universities around the globe aim to become world class without understanding what that actually means and how to operationalize their strategies. Therefore, China's experience has implications for many others that are also eager to catch up on university development.

China's AEIs, as shown especially in the KPIs, signify a change of reference. As an effort to govern today's global HE space, rankings are one of the primary indicators of positioning. China's HE is going global now. Its drive to create world-class universities shows a change in the frame of reference of HE reforms with a passionate embrace of international norms, especially at the top layer of the nation's finest universities. Chinese universities once competed among themselves, without looking outward at their international peers for standards. Only in the last two decades have the top Chinese universities embraced a larger international sense of themselves. In today's China, discussions of university reforms necessarily involve the Chinese and the Western perspectives. China's embrace of international standards is evidently expressed by its active participation and impressive performance in global ranking systems, mainly at the institutional level. This participation demonstrates China's repositioning in the global community.

The Impact on Participating Universities and the National System in a Whole

China's AEIs are important measures taken by the government to facilitate HE development in China's advancement in social and economic fields. Their combined impact generally includes an overall improvement of institutional

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capacity, the rapid development of some key disciplinary areas, and an infrastructural improvement of the public service system of HE. With the primary purpose of training a high-level professional workforce to implement the national strategy for social and economic development, the projects have enabled the government to initiate actions to strengthen a number of institutions of higher learning and key disciplinary areas. For example, a direct impact of Project 211 is that some 100 institutions of higher learning and a group of key disciplinary areas improved their quality of education, scientific research, management, and institutional efficiency. According to Wu (2015), who chaired the national HE evaluation team, the participating institutions of Project 211 and Project 985 became the principal force of China's HE sector and greatly improved the overall capacity of the system.

By extension, these initiatives also contributed significantly to China's development through accelerating national economic progress; pushing forward the development of science, technology, and culture; enhancing China's overall capacity and international competitiveness; and laying the foundation for training a high-level professional workforce, mainly at educational institutions from home. The participating universities also made considerable progress in their reforms of institutional management and administration that consequently paved the way for workforce training and solving major problems for China's economic construction and social development. The selected institutions have set up national standards in overall quality, with some of the key universities and disciplinary areas approaching or reaching the advanced international standards.

The Chinese government's investments have reaped rewards. During the past two decades or so, China's proactive initiative for building world-class universities and a modern HE system have substantially strengthened the nation's R&D and contributed significantly to the global visibility of Chinese universities, as shown in various ranking schemes. China's universities have seen an extraordinary upward trajectory in recent years, with strong performances in both regional and global rankings. For instance, the number of institutions from Mainland China has grown steadily in the QS World University Rankings by the British company Quacquarelli Symonds (QS), changing from thirty in 2016 to thirty-seven in 2018, forty-two in 2020, and fifty-eight in 2022. China is rapidly increasing its international visibility in the global HE landscape. It has become Asia's largest and world's third-most-popular study destination. In 2018, China hosted 482,185 overseas students enrolled in 1,004 institutions in all thirty-one provinces (Ministry of Education 2019).

The effect is seen in various global university ranking systems (Bothwell 2021), especially ARWU, as shown in table 2.1.

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Table 2.1
Performances of Chinese universities in ARWU (2004, 2021) and the QS World University Rankings (2021)

Number of Mainland Chinese Universities Listed in 2004 ARWU	Number of Mainland Chinese Universities Listed in 2021 ARWU	Number of Mainland Chinese Universities Listed in 2021 QS Rankings
8 (none in the top 100)	157 (7 in the top 100)	51 (6 in the top 100)
Major Mainland Chinese Universities Listed in 2004 ARWU	**Major Mainland Chinese Universities Listed in 2021 ARWU**	**Major Mainland Chinese Universities Listed in 2021 QS Rankings**
Peking and Tsinghua in top 202–301	Tsinghua 28th and Peking 45th	Tsinghua 15th and Peking 23th
Fudan, Nanjing, University of Science and Technology of China, and Zhejiang in top 302–403	Zhejiang 52th Shanghai Jiao Tong 59th University of Science and Technology of China 63th Fudan 77th Sun Yat-sen 89th	Fudan 34th Shanghai Jiao Tong 47th Zhejiang 53th University of Science and Technology of China 93th

In human and social sciences, however, the effect of China's AEIs has been much less impressive. Within international knowledge asymmetries, the humanities and social sciences institutionalized in universities worldwide are European in structure, organization, and concept. China is no exception. Due to their disciplinary nature, research questions and focuses, the humanities and social sciences tend to be rooted in local and national contexts (Altbach 1998). Even with the desperate intent to have a larger international readership, Chinese researchers in these disciplines have achieved little visibility within the international community. With a strong catch-up mentality, China's humanities and social sciences face a number of further challenges, such as overpragmatism and academic nationalism. Other major obstacles include English as the global language of scholarship, China-specific research modes and argumentation styles, and China's domestic research evaluation system. Furthermore, in comparison with natural and technological sciences, China's highly centralized HE system is a greater impediment to the development of these disciplines. The state-defined epistemological limits are inimical to the full-fledged growth of knowledge, which requires unbridled intellectual pursuit.

While China's international publications in the humanities and social sciences have been increasing, their contribution to dialogue with international scholars remains limited. With growing emphasis on international visibility and benchmarking, Chinese universities have further adopted standards and norms from global centers in assessing domestic knowledge production.

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Chinese scholars continue to confine themselves to Western norms and employ Western theories to interpret their own society, creating knowledge from and about China primarily in Western terms, without adding a distinctive Chinese strand to the global conversation. However, with sustained strong support from the state, institutions, and individuals, Chinese scholars are well positioned to contribute to the dialogue with international peers. They are increasingly required to adjust their agendas and priorities and recontextualize their themes, concepts, and paradigms; however, such an adjustment takes time (Xu 2020). The government has called on Chinese researchers to accelerate the construction of Chinese characteristic-driven philosophy and social sciences. While China's global race for excellence in social and human sciences education and research involves a longer process, Chinese universities have certainly started along this road.

Evaluation and Sustainability of the AEIs

There are various questions to ask in relation to the sustainability of China's AEIs. First, all the initiatives typically show Chinese ways of policymaking and implementation: top-down, government-led, quick effects, with a relatively short-term focus and outstanding fundamental questions. Because the world has adopted Western values and institutions deeply and widely, China, with its highly modernized national systems and institutions, has largely learned from the West fast and well in HE. The series of AEIs are part of such catch-up endeavors, with obvious results. However, China's modern university development is fundamentally cultural, centered on how to integrate Chinese intellectual traditions into the dominant and institutionalized Western values. China's modern HE institutions aimed to judiciously combine learning from Western traditions and the ideological, intellectual, cultural, and educational specificity of Chinese culture. China's universities have been able to improve their hardware considerably, while, as is always the case in China, software building takes much longer (Yang 2013). In this regard, China has a long way to go.

Second, China's three key programs have been perceived largely positively both nationally and internationally. Many in Asia and Europe follow them with keen interest, even with similar policy responses, especially in neighboring countries such as Japan and South Korea (Chen and Liu 2019). Within China, as such policy initiatives are highly political; they have not been seriously criticized, although a few scholars have voiced their strong concerns over a number of key issues. The dominant role of the government is vital in policymaking and its implementation throughout the projects. One might ask how sustainable such a powerful governmental role is and how long it should remain.

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China has always relied on its project-based approaches, which do not necessarily pave the way for individual and institutional innovation. In the long run, China needs to fully exploit the creativity of every individual university and its academics. So far, such creativity has been greatly and unwisely neglected. The government has been relying overwhelmingly on monetary and material means to motivate institutions and individuals. Yet only when institutional and individual curiosity plays a significant role can China's HE truly become a globally respected superpower.

Third, the result of the initiatives is disappointing (at least to some people) because the gap between the chosen institutions and the vast majority of China's regular universities is widening quickly. Even if the strategic initiatives are designed to develop some flagship institutions as the first step, policymakers need to consider their long-term effects on the entire system. China's best-known and most-privileged institutions, Peking University and Tsinghua University in particular, are set to continue to receive the most resources, as they have the greatest number of disciplines included on the list of those targeted to be developed to a world-class level. In 2021, Tsinghua University's funding reached 31.7 billion RMB (7.58 billion USD), in contrast to Chongqing University's 6.72 billion RMB (1.61 billion USD), Shanxi University's 1.55 billion RMB (0.37 billion USD), and Hubei University's 1.16 billion RMB (0.28 billion USD). The gap between rich and poor areas also remains prominent. Out of the forty-two chosen universities, eight are located in Beijing, six in Shanghai, and another few located along the east coast. None of the universities located in relatively poor areas—Ningxia, Guizhou, Guangxi, Heilongjiang, Inner Mongolia, Shanxi, Chongqing, Tibet, Qinghai, Hainan, Hebei, and Jiangxi—were included in the list. Despite some discussions limited mainly to academic circles (see, e.g., Liu 2017), this problem has been generally ignored by the government.

Overall Assessment

After China's defeat in the Opium War of 1840, there was great concern about the superiority of the West and fierce debate about how to respond. China's modern HE institutions were established to learn from the West in order to modernize the nation. Their development in early modern times was characterized most prominently by these endeavors, with much sophistication at the individual, institutional, and systemic levels in managing relations between China and the West in education, scholarship, and university operations. These achievements were reached soon after the Western concept of a university was introduced to China. The Chinese set a high bar even by today's standards. Due to the lack of a strong central government, China's heroic past was a time

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of turmoil and chaos, yet it was marked by a real effort to establish a "university" in the sense of its defining values of autonomy and academic freedom. The inconvenient truth is that such achievements were rarely exceeded over the ensuing half century—neither in Mainland China, Taiwan, nor Hong Kong. Intermittent spasms and outpourings of resources do not guarantee sustainability. Neither finance nor ideology is the root cause here: the crux is cultural. China has much to learn from its own history, especially from modern times, when early encounters between Chinese and Western traditions occurred.

Thinking along these lines, China's academic culture should be watched carefully. As the current situation reveals, it is a major barrier to China's path toward a world-class HE system and world-class universities. The chosen universities need to meet highly specific requirements set by the government without much autonomy. The appointment of university presidents, academic staff quotas and programs, and student admissions are still controlled by governments. The decades-long use of material rewards has damaged China's academic culture, distancing the system and its members further from curiosity-based scholarly work. It has not only corrupted the morale in Chinese universities, it has also made a large number of Chinese studying and working overseas hesitate to return. However, Chinese HE system has undeniably made tremendous strides over the past decades. With such remarkable progress, China's great efforts have clearly begun to pay off. It is now the time for the country's political and educational elites to seriously consider how to blend Chinese and Western cultural values to let both serve Chinese HE. China's universities, especially those at the top of the system, have to learn to strike a nuanced balance between speaking truth to power and working with and even for the government to serve society.

As noted in this chapter, China's remarkable achievements in such endeavors have come with criticisms. The side effects of such initiatives have hugely exacerbated the disparities between a relatively small number of beneficiary universities and the nonselected mainstay institutions of Chinese HE. There are also opportunity costs, where financial investments are not always spent on the most deserving projects. Some say that China has tried to achieve excellence in too many areas at once, and the initiatives have included only some selected flagship universities for heavy investment with little differentiation, and thus have wasted a large amount of resources on duplication at the expense of excellence. The culture in the system always demands speedy results, which can undermine research. As the former Yale University president Richard Levin has warned, the "top schools have expanded much too fast and are diluting quality" (French 2005).

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Conclusion

Over the past few decades, China has adopted strategies to invest heavily and focally on a highly selective small group of HE institutions. HE development has been very much in line with the wider reform and development in the society. Indeed, the two have been mutually reinforcing. This was achieved after China's development was suspended for many years. The entire nation woke up and was determined to catch up. China's HE system and institutions were urged to liberate themselves from the prereform planned system, in which universities were separated from industry. Therefore, the reforms have targeted direct links between HE institutions, the market, and industry to quickly contribute to economic and social development. This happened when the market was introduced to the HE sector internationally, with a profound neoliberal influence. These trends combined well with China's strong state intervention to activate its HE, forming a marked contrast to the situation during the planned era.

The effect of China's highly strategic policies by the omnipresent state has been most obvious. China is the only country in nearly all global ranking schemes that has been leaping forward consistently and consecutively over the years. It has become the largest producer of scholarly papers in the world and second only to the US in terms of citations. A modern, Western-style HE system has been established, which has experienced a transformation from elite to mass form. The gross enrollment rate in tertiary education in China reached 54.4 percent of the respective age cohorts in 2020. A considerable number of Chinese institutions of HE are fast becoming ready to reach world-class status. While some say that China's progress in HE has been only quantitative and imitative (Mohrman 2005), in a catch-up process, a certain degree of imitation and a high degree of quantitative growth are needed to pave the way for the next stage of innovative and qualitative development.

China's HE looks messier in practice than it does in books. Many of its numbers may look great from a distance, but close-up observation reveals serious challenges, and even a crisis at various levels in a number of key areas, including teaching, learning, research, and governance. Many approaches that have been working well in the process of catching up might not be as effective during the next stage of qualitative development. This will be the true test for the sustainable development of China's HE system. It touches upon many fundamental aspects. An often-raised question concerns academic freedom and institutional autonomy.

The past several decades have witnessed great achievements in HE by nations such as Singapore that do not have much academic freedom in the strict

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sense, while HE development in some societies that have long enjoyed the reputation for academic freedom is becoming stagnant or even falling behind. However, this does not invalidate the criticism of the lack of academic freedom and institutional autonomy. Another issue is the enduring influence of the "Soviet pragmatism" that China learned in the 1950s. Combined with other factors, it has led to overcommercialization and rampant academic misconduct, with people only seeking instant benefits and dooming HE policymaking to shortsightedness.

It should be noted that China's success in AEIs is limited both geographically and disciplinarily. It is much less substantial in the least developed regions. It also faces a variety of difficulties in the humanities and social sciences throughout the nation, including at China's premier universities. Two additional questions are relevant to AEIs elsewhere. The first is whether China's seemingly stunning success in HE development, built upon tight control by a strong state that has never ceded its right to intervene, is sustainable. The second is whether the Chinese model of governance in HE can truly befuddle researchers and policymakers who are accustomed to a dichotomy between state intervention on one side and Western-style academic freedom and institutional autonomy on the other.

References

Altbach, Philip G. 1989. Twisted roots: The Western impact on Asian higher education. *Higher Education* 18 (1): 9–29.

Altbach, Philip G. 1998. *Comparative Higher Education: Knowledge, the University, and Development*. Greenwich, CT: Ablex.

Ball, Philip. 2018. "China's Great Leap Forward in Science." *The Guardian*, February 18, 2018. https://www.theguardian.com/science/2018/feb/18/china-great-leap-forward-science-research-innovation-investment-5g-genetics-quantum-internet.

Bao, Wei, Jie Chen, and Tingting Wan. 2016. The analyses of operating mechanism and efficiency for Project 985: Based on the perspective of international comparison and empirical study. *Economics of Education Research (Beida)* 14 (4): 1–14.

Bothwell, Ellie. 2021. Chinese universities are on a par with institutions in the UK, US and Canada when judged against China's classification of subjects. *Times Higher Education World University Rankings*, May 11, 2021. https://www.timeshighereducation.com/china-subject-ratings-2021-china-outperforms-rest-world.

Callahan, William A. 2004. National insecurities: Humiliation, salvation, and Chinese nationalism. *Alternatives: Global, Local, Political* 29 (2): 199–218.

Cao, Desheng. 2021. Xi: Build world-class universities. *China Daily*, April 20, 2021. https://www.chinadailyhk.com/article/163595#Xi:-Build-world-class-universities.

Cao, Yannan, and Rui Yang. 2019. World-class university construction and higher education governance reform in China: A policy trajectory. In *The Governance and Management of Universities in Asia*, edited by Changda Wan, Molly Lee, and Hoeyeong Loke, 21–42. New York: Routledge.

Chen, Baosheng. 2017. Press conference for the fifth session of the 12th national press conference. http://www.gov.cn/zhuanti/2017lh/live/0312b.htm (in Chinese).

Downloaded from http://direct.mit.edu/books/book-pdf/2218384/book_9780262376693.pdf by guest on 18 November 2024

Chen, Liyuan, and Niancai Liu. 2019. Building world-class universities: The Chinese mode and its international influence. *Educational Research* 40 (6): 105–115.

China Science Daily. 2020. The convincing world's first class: How to assess it? https://www.edu.cn/ke_yan_yu_fa_zhan/special_topic/syl/202010/t20201013_2021253.shtml (in Chinese).

Deem, Rosemary, Kaho Mok, and Lisa Lucas. 2008. Transforming higher education in whose image? Exploring the concept of the "world-class" university in Europe and Asia. *Higher Education Policy* 21 (1): 83–97.

Eun, Jonghak, Keun Lee, and Guisheng Wu. 2006. Explaining the 'university-run enterprises' in China: A theoretical framework for university-industry relationship in developing countries and its application to China. *Research Policy* 35 (9): 1329–1346.

French, Howard W. 2005. China luring scholars to make universities great. *The New York Times*, October 28, 2005. https://www.nytimes.com/2005/10/28/world/asia/china-luring-scholars-tomake-universities-great.html.

Han, Shuanmiao, and Xin Xu. 2019. How far has the state "stepped back": An exploratory study of the changing governance of higher education in China (1978–2018). *Higher Education* 78 (5): 931–946.

Holmes, Richard. 2006. The THES university rankings: Are they really world class? *Asian Journal of University Education* 2 (1): 1–14.

Jain, Romi. 2021. How China is bidding for global intellectual dominance. *University World News*, October 2, 2021. https://www.universityworldnews.com/post.php?story=20210929100204424..

Kirby, William C. 2014. The world of universities in modern China. In *Global Opportunities and Challenges for Higher Education Leaders: Briefs on Key Themes*, edited by Laura E. Rumbley, Robin Matross Helms, Petti McGill Peterson, and Philip G. Altbach, 73–76. Rotterdam, Netherlands: Sense Publishers.

Lei, Jiasu, Ying Liu, Yaoyuan Qi, and Qingzhi Zhang. 2019. 40 years of technological innovation in China: A review of the four-stage climbing track. *Journal of Industrial Integration and Management* 4 (3): 1–22.

Li, Lixu. 2004. China's higher education reform 1998–2003: A summary. *Asia Pacific Education Review* 5 (1): 14–22.

Liu, Haifeng. 2017. Fairness and efficiency in the "Double First-Class" construction. *Higher Education Review* 5 (2): 8–17.

Liu, Qiang, David Turner, and Xiaoli Jing. 2019. The "Double First-Class Initiative" in China: Background, implementation, and problems. *Beijing International Review of Education* 1 (1): 92–108.

Mai, Jun. 2021. Technology key to China's vision for the future as a world leading power. *South China Morning Post*, March 6, 2021. https://www.scmp.com/news/china/politics/article/3124316/technology-key-chinas-vision-future-world-leading-power..

Mao, Jianqing, and Junling Wu. 2020. Characteristics and optimization of the expenditure scale and structure of the funding for building world-class universities in China: An analysis based on the data of 36 institutions. *Journal of Higher Education Management* 14 (3): 60–72.

Marginson, Simon. 2021. National modernization and global science in China. *International Journal of Educational Development* 84: 1–12. https://doi.org/10.1016/j.ijedudev.2021.102407.

Ministry of Education. 2019. Statistics of study abroad in China in 2018. http://www.moe.gov.cn/jyb_xwfb/gzdt_gzdt/s5987/201904/t20190412_377692.html (in Chinese).

Ministry of Education. 2021. National Education Statistics Bulletin in 2020. http://www.moe.gov.cn/jyb_sjzl/sjzl_fztjgb/202108/t20210827_555004.html (in Chinese).

Mohrman, Kathryn. 2005. Sino-American educational exchange and the drive to create world-class universities. In *Bridging Minds across the Pacific*, edited by Cheng Li, 219–235. Lanham, MD: Lexington Books.

National People's University Photocopy of Newspapers and Periodicals. 2018. From hundreds of millions to tens of billions: A summary of the funding and goals for the construction of

Downloaded from http://direct.mit.edu/books/book-pdf/2218384/book_9780262376693.pdf by guest on 18 November 2024

Double First-Rate projects in various provinces (latest). December 6, 2018. https://translate.google.com/translate?hl=en&sl=zh-CN&u=ibook.antpedia.com/x/37331.html&prev=search&pto=aue..

People's Daily. 2017. Elimination mechanism in the Double First-Class Plan. https://gaokao.chsi.com.cn/gkxx/zybk/201709/20170922/1630312074.html (in Chinese).

Peters, Michael A., and Tina Basley. 2018. China's double first-class university strategy. *Educational Philosophy and Theory* 50 (12): 1075–1079.

Salmi, Jamil. 2016. Excellence initiatives to create world-class universities: Do they work? *International Higher Education* 87: 17–18.

Schell, Orville, and John Delury 2013. *Wealth and Power: China's Long March to the Twenty-First Century*. New York: Random House.

Wang, Peng. 2022. Service innovation, development and improvement of management mechanism—Interpretation of the second round of "Double First-Class" construction. https://www.breakinglatest.news/news/service-innovation-development-and-improvement-of-management-mechanism-interpretation-of-the-second-round-of-double-first-class-construction-xinhua-english-news-cn/.

Wu, Daguang. 2015. Some core knowledge of the third party in higher education evaluation. http://www.moe.gov.cn/jyb_xwfb/xw_fbh/moe_2069/xwfbh_2015n/xwfb_151204/151204_sfcl/201512/t20151204_222888.html (in Chinese).

Xie, Yu, Chunni Zhang, and Qing Lai. 2014. China's rise as a major contributor to science and technology. *Proceedings of the National Academy of Sciences* 111 (26): 9437–9442.

Xu, Xin. 2020. China "goes out" in a centre-periphery world: Incentivizing international publications in the humanities and social sciences. *Higher Education* 80 (1): 157–172.

Yang, Rui. 2013. Indigenizing the Western concept of a university: The Chinese experience. *Asia Pacific Education Review* 14 (1): 85–92.

Yang, Rui. 2022. Baby and bathwater or soup? Some epistemological considerations of how to observe China and Chinese education. *Globalization, Societies and Education* 20 (1): 49–55.

Yang Rui, and Anthony R. Welch. 2011. A world-class university in China? The case of Tsinghua. *Higher Education* 63 (5): 645–666.

Zhang, Guobing. 2010. *A Study of Focalized Construction Plans of Higher Education in China*. Beijing: Peking University Press.

Zhang, Zhihao. 2020. Nation ranks top in 8 fields of science. *China Daily*, December 30, 2020. https://www.chinadaily.com.cn/a/202012/30/WS5febcddba31024ad0ba9f6ed.html.

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3

Academic Excellence Initiatives in Japan: Can a Series of Government Interventions Make a Difference?

Akiyoshi Yonezawa

Introduction

Academic excellence has been recognized as a principal advantage of Japan as an advanced and mature society and economic power in East Asia. Excellence in science, technology, and innovation has been a key policy agenda for Japan in the last quarter-century (Odagiri 2006). Conceptualizing the idea of Society 5.0, a human-centered society that balances economic advancement with the resolution of social problems by a system that integrates cyberspace and physical space (Onday 2019), the Japanese government and top research universities and institutes in the country are now accelerating their strategic reforms to become globally competitive. However, this does not mean that Japan has a strong reputation for policies focusing on academic excellence initiatives (AEIs). The research performance of the entire country—including its top universities—has been slowly declining for around two decades, despite the significant growth in research performance experienced by its East Asian neighbors and the recent improvement in Japan's international research connections with global academic communities and industry (Nature Index 2017, 2019). The Japanese government also admits that there has been a decline in its national research capacity. According to the National Institute for Science and Technology Policy (NISTEP 2021, 9), Japan's share of the top 10 percent of highly cited papers declined from 6.1 percent (fourth, after the US, the UK, and Germany) in 1997–1999 to 2.3 percent (tenth, after China, the US, the UK, Germany, Italy, Australia, Canada, France, and India) in 2017–2019. As shown in figure 3.1, the number of new PhD recipients in Japan has also been consistently declining since the mid-2000s, contrasting with a continuous increase among its Asian neighbors (i.e., China and South Korea) and the leading Anglophone countries (i.e., the US and the UK).

Japan's general policy to pursue academic excellence has been more or less consistent as a symbol of national competitiveness since the country's

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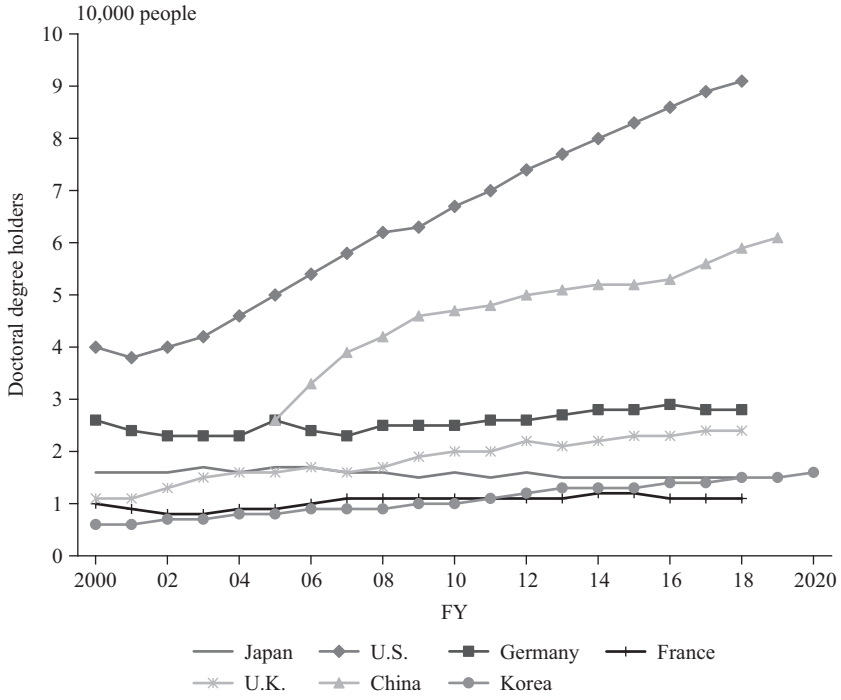

Figure 3.1
New PhD recipients of various leading countries (2000 to 2020). *Source*: NISTEP (2021, 7).

modernization, beginning in the mid-nineteenth century (Nakayama and Low 1997), while its specific implications have drastically changed under globalization and the knowledge economy and with the increasing influence of international rankings since the 1990s (Yonezawa 2021). Having achieved dominant positions in science and technology in Asia by the 1990s, Japan's top universities and the government have been motivated by the desire to catch up to the US and other leading countries. They have also recognized the increasing threat of the progression of emerging economies among its neighbors.

Governance and management have also been reformed over the last two decades, aiming for the achievement of national academic excellence and the implementation of New Public Management (NPM). In 2004, all the universities that had been operated directly by the national government as state facilities were given independent status as national university corporations in order to reinforce their institutional autonomy and financial efficiency (monitored by a performance assessment based on six-year goals and plans of these

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universities). In 2017, the government began the authorization of designated national universities (DNUs) by selecting only a limited number of national universities based on their research capacities for fostering world-class academic competitiveness to help them obtain further institutional autonomy (Yonezawa and Huang 2021).

Various types of national research institutes were also incorporated in 2004 as national research and development (R&D) agencies or interuniversity research institute corporations as part of the national scheme. The government authorized three top research institutes as specific national R&D agencies in 2016: Riken, the National Institute for Material Science (NIMS), and the National Institute of Advanced Industrial Science and Technology (AIST).

From the beginning of the twenty-first century, the government started AEIs as explicit key tools for promoting the knowledge economy. These policy initiatives should be understood as reactions against the increased competition with advanced and emerging economies in knowledge production, and as a part of the general policy to provide a wide range of stimulus policies to address a stagnating national economy. As Japan's higher education (HE) and research system had already achieved the highest status in the Asia-Pacific region by the end of the 1990s, the enhancement of the international visibility of its academic excellence—which relied heavily on the national language and network—became an urgent challenge for further development. Accordingly, with the emergence of widely available world university rankings relying primarily on research performance, the Japanese government felt it necessary to concentrate its budgetary resources on top research universities and national research institutes.

This chapter introduces and analyzes the various types of AEIs that have been implemented in the last quarter-century in Japan. The cost of these project-based AEIs is estimated at least 338 billion JPY or 3.1 billion PPP USD, while the exact share of these project-based funds for leading research universities is less than 1 percent. First, the aims, funding, implementation, and impacts of a series of frequently changing AEIs in Japan are examined. Second, the background of policymaking is examined, focusing on the interactions among various stakeholders (namely, the government, universities, research institutes, industry, and society). Finally, Japan's unique AEIs—as institutional capacity developers—are identified as a sustainable but high-stakes approach to academic excellence that is continuously underfunded in HE.

Despite a series of AEIs, the continuous system reforms and policy interventions have not yet achieved their intended goals. The academic performance of Japanese universities and top research institutes thus far has been losing international visibility—or, more precisely, it has not kept up with the

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significant increase in the research performance of their Asia-Pacific neighbors, nor the drastic increase in international research collaboration worldwide. This chapter examines the reason behind why Japan's AEIs have not achieved the intended goals, and then it introduces a new AEI plan, the success of which is not yet known.

Early Focus on Academic Excellence

Before World War II, Japan had developed a hierarchical HE system. Until the mid-nineteenth century, Japan had limited its interaction with the Western world; however, after the Meiji Restoration in 1868, it actively pursued an academic excellence equivalent to that of the Western world in order to achieve national wealth and strength. Toward that purpose, by the end of World War II, the Japanese government had established seven imperial universities, following the continental European models of universities affiliated with the faculties, graduate schools, and research institutes.

After World War II, the government abolished the imperial university system and provided equal legal status to all national, local public, and private universities (Tsuchimochi 1993). However, the former imperial universities maintained their dominant position in academic excellence through a special budgetary funding formula based on the research-led chair system that inherited the prewar continental European tradition. Considering that the majority of undergraduate students were enrolled in private universities that mainly relied on the income from tuition fees, the Japanese government had already concentrated public funding in academic excellence for a limited number of national research universities (Itoh 2002). In addition to these research universities being a major sector of academic excellence, the government developed various national institutes with specific research functions based on their ministries and departments, and some of them, including Riken, which was established in 1917, achieved excellence in their research activities.

By the end of the 1980s, Japan's economy had reached a world-leading position based on its well-trained workforce and industrial technology (Blinco 1993). At the same time, demands regarding Japan's contribution to basic science, which requires resources beyond those of the applied sciences directly associated with industrial development, began to be advocated for from inside and outside the country. In terms of research activities at universities, strong criticisms regarding underfunding—especially for basic research—were raised by the leaders of national universities and academic communities (Arima 1992).

Since the beginning of the 1990s, the Japanese government has strengthened its strategic approach to science, technology, and innovation policies as

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core drivers of national development. In 1995, the Basic Law on Science and Technology was enacted, and the national government began to formulate a Basic Plan for Science and Technology every five years (Low, Nakayama, and Yoshioka 1999). Furthermore, the top national universities in Japan designated graduate schools as the core organizations affiliated with faculty members and aimed to strengthen their research function (Ogawa 2002).

At the end of the 1990s, Japan's research experienced a golden age. According to the regional university rankings published by *Asiaweek*, Japanese universities dominated the top positions among universities in the Asia-Pacific region at the end of the 1990s (Yonezawa et al. 2016). However, by that time, the Japanese economy had already passed its peak and was in the midst of a long-term economic recession (Raymo and Shibata 2017). Thus, the intensified public investment in science and technology of the 1990s became part of the government's economic stimulus measures, flying in the face of economic stagnation and increasing governmental debt (İmrohoroğlu, Kitao, and Yamada 2019).

Adding to this, in 2001, the government comprehensively reorganized government ministries and agencies based on the Basic Law for the Reform of Central Government Ministries and Agencies. Under this scheme, the Ministry of Education, Science, Sports, and Culture (Monbusho) and the Science and Technology Agency (STA), the national department in charge of science and technology policies, merged to create the Ministry of Education, Culture, Sports, Science, and Technology (MEXT) in 2001. In the same year, the Council for Science and Technology Policy was set up under the Cabinet Office (Kuroda 2002); then, in 2014, this council was reorganized into the Council for Science, Technology, and Innovation (CSTI).

Through this reorganization of government bodies, university policies, especially those for national universities, transformed their operations from public facilities, with the supervision of local public and private universities under the Higher Education Bureau of Monbusho, to the utilization of the university sector, especially national research universities, as drivers of advancement in national science, technology, innovation, and the knowledge industry (Fukui 2021b). This means that MEXT showed interest in (mostly national) top research universities and research institutes as a core component of the HE sector and as a mechanism for improving national output in science and technology. Thus, CSTI under the auspices of the Cabinet Office connects these top universities and research institutes through a wider policy agenda—that is, the national innovation and industrial policies backed by various ministries, such as the Ministry of Economy, Trade, and Industry (METI) and the Ministry of Finance (MOF) (Aoki 2021).

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Supporting Top Research Centers

The funding schemes for AEIs in Japan can be divided into three categories: (1) funding for improving the research activities of specific top research centers and groups of universities, (2) funding to support the internationalization of universities, and (3) the concentration of public funding in a limited number of top universities, which required the transformation of university finance, governance, and management to those of world-class research universities. The first category, which are typical patterns of AEIs seen in many countries, were implemented first in Japan. However, this type of AEI did not become the mainstream in Japan.

In 2001, Atsuko Toyama, the minister of MEXT, revealed her plan to foster thirty world-class universities in Japan as a policy response of the Ministry to the Council on Economic and Fiscal Policy under the auspices of the Cabinet Office. The official title of this policy paper was the "Policy for Structural Reform of Universities (National Universities)." In this one-page memo, the following three principles were stated: (1) to actively promote the restructuring and integration of national universities, (2) to introduce a private-sector approach to management at national universities, and (3) to introduce the principle of competition through third-party evaluations of universities. This paper set the policy goals of developing the top thirty national, local public, and private universities in Japan to reach the world's highest levels. The Toyama Plan meant that fostering world-class universities was an instrument for the development of the national knowledge economy, and the Japanese government would pursue this goal through NPM and performance-based funding (Yonezawa 2003).

The Toyama Plan, however, did not say how the government would identify these top universities. After the abolition of imperial universities in the 1940s, in reference to the California Master Plan, in 1971, a government commission recommended the categorization of universities and HE institutions according to their functions (Itoh 2002). However, this policy proposal was not realized due to strong resistance among university stakeholders who advocated for equal treatment among universities as an HE system open to the general public. When the Toyama Plan was released in 2001, some university stakeholders were still critical of introducing the official categorization of these top thirty universities (Yonezawa 2003).

By that time, China had already implemented its key university schemes (Project 211 and Project 985), which selected a limited number of universities in which to foster world-class academic excellence (Yang and Welch 2012). In 1999, South Korea also started an AEI called Brain Korea 21 (BK 21), selecting key research and education units to support as scholarship programs (Moon

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and Kim 2001; Seong et al. 2008). While government officials, HE experts, and leaders in Japan were fully aware of AEIs in neighboring countries, the top Japanese research universities at that time saw themselves as more established than the top universities of other Asian countries.

CoE

At the end of 2002, the Japanese government launched the 21st Century Centers of Excellence (21st Century CoE) scheme to select and support research units (typically departments, centers, and smaller research groups) to conduct world-class research and education for five years. The scheme was open to all national, local public, and private universities, and 274 units were ultimately selected through peer reviews by academics in the respective fields. Each unit was funded with around 100 million JPY (0.7 million USD) on average per year. In 2007, the Japanese government started the Global Centers of Excellence (Global CoE) scheme as a successor to 21st Century CoE, with 140 units from forty-one universities being supported. Each unit was funded with 200 million JPY (1.7 million USD) per year on average. The selection of universities that would receive funding was made by a peer committee organized under the Japan Society for the Promotion of Science (JSPS) via documents (and interviews, if necessary) that assessed their ability to conduct world-class research.

The total budget spent for 21st Century CoE in 2003 was 33.4 billion JPY (239 million USD), which was more than the total spending for BK 21 in South Korea in 2004 (140 billion KRW (176 million USD)) (Kim 2007). Compared to China and South Korea, which were in the process of establishing a research infrastructure with significant additional funding (especially in China) and strong international networks through leading faculties with mainly US PhDs (in South Korea), the Global CoE schemes had a relatively limited impact, partly because the infrastructure for basic research had already been established and partly because the international linkage of the academic communities, including science and technology fields, were limited. Following a critical government spending review, in 2009, the government decided on a policy to make drastic budgetary reductions. All the Global CoE unit leaders issued a statement protesting these government policies. In the end, the government began to reduce the budget—but not as drastically as planned—and did not launch a successor scheme for the Global CoE.

World Premier Initiatives

In 2007, in parallel with Global CoE, the Japanese government launched another AEI called the World Premier International Research Center Initiative (WPI) for fostering research excellence among the country's top

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universities and nonuniversity research institutes. This overlapping policy arrangement was based on sectional budgetary arrangements within MEXT. The CoE programs were funded under the Higher Education Bureau of Monbusho, while the WPI scheme was funded under the Research Promotion Bureau, which originated from the STA before merging into MEXT. The initiative was launched directly with the Basic Plan for Science and Technology and supported a limited number of world-leading research centers for ten years. The funding scheme at the beginning of its implementation was 1.4 billion JPY (12 million USD) per institute per year, with budgetary changes and an extension based on the results of interim and final assessments. By 2023, only seventeen research centers from eleven national universities and three national research institutes had been selected.

WPI participants were selected, monitored, and assessed by the Program Committee, including international members under JSPS. The research centers had the following numerical targets: more than 200 staff, including more than 20 world-class principal investigators and 100 young researchers, postdoctoral fellows, and administrative and research support staff. More than 20 percent of the principal investigators are foreign nationals; more than 30 percent of the total researchers are foreign nationals; and all the postdocs are recruited internationally. These criteria have been achieved in almost all WPI institutes. The selection and monitoring of the institutes were undertaken by the Program Committee, one-third of the members of which are from outside Japan.

While the official review of WPI stressed its success in achieving these numerical targets, the impact of this scheme on research funding was somewhat limited. First, Japan had been concentrating its public investment in academic activities on a limited number of top research universities and research institutes since the beginning of the modern HE system in the late nineteenth century. Second, the total size of WPI was small compared with the AEIs in other countries, such as Germany. Third, project-based schemes with a fixed term require short-term outcomes from their research activities and do not necessarily ensure sustainable academic excellence. WPI was expected to be a leading model for developing a top world-class research environment among top research universities and research institutes. WPI certainly changed the academic culture, but mostly only within its participants. For example, the Advanced Institute for Materials Research (AIMR) of Tohoku University, a WPI, made English its official language for both research activities and administration, recruited researchers from all over the world, and occasionally invited principal investigators under cross-appointments with other globally leading universities, such as the University of Cambridge and the University of Chicago. However, the internationalized research environment of the AIMR has

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not expanded to other schools and research institutes of the university, as part of a universitywide transformation into a globally open academic environment.

The Internationalization of Top Universities

In parallel with the CoE and WPI schemes, the government also provided schemes for promoting the organizational transformation of top research universities—more specifically, their internationalization. As a country that has developed its academic system under the dominance of its national language, Japan's universities and academic communities have always acknowledged the necessity of internationalization for catching up to the world's leading universities in other advanced countries and achieving a global presence.

Especially in Japan, the internationalization of universities and research institutes has been recognized as a central challenge. As a country that avoided colonization, Japan established a long-term tradition of fostering next-generation academics mostly through graduate education at top research universities within the country (Yonezawa, Horta, and Osawa 2016). In addition, until 1982, the prohibition against the hiring of foreign nationals as civil servants was applied to the faculty of national and local public universities. In 1983, the Japanese government started to promote the internationalization of HE, initiating a plan to accept 100,000 international students by the end of the twentieth century. However, because university governance was based on the strong decision-making powers of regular faculty meetings conducted in Japanese, the majority of top Japanese universities and research institutes had trouble attracting international talent.

The emphasis on internationalization as a tool for achieving academic excellence could be understood by the following background. First, there were widely shared views among leading academics in Japan that the performance and capacity of researchers at Japanese universities were not fairly recognized because of the language barrier. These academics, who had mostly developed their careers without studying abroad, were confident of their research capacity and thought that they would be well recognized if they acquired international communication skills and networks.

Second, in the 1990s, Japanese top universities to some degree succeeded in attracting graduate students mainly from Asian countries, but they had to have a high level of Japanese language competence to develop their career with Japanese enterprises and universities. Facing a decrease in the domestic youth talent pool, universities and policy leaders felt it necessary to attract overseas talent by providing study and research environments in English. Third, for leading universities and policymakers, the promotion of internationalization

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as part of a world-class university policy was an attractive approach. For policymakers, the budgets for internationalization were much less than the actual research funding. For the experts of international university education and exchange, this linkage appeared to be a good justification for securing the funds for them. However, it is apparent that internationalization cannot be a standalone solution for achieving academic excellence. Thus, in the end, these internationalization AEIs inevitably led to unsatisfactory results.

Strategic Fund for Establishing International Headquarters in Universities (SIH)

In 2005, the Japanese government started a project called the Strategic Fund for Establishing International Headquarters in Universities (SIH) as a five-year project. The purpose of this program was to establish a cross-disciplinary organizational structure among top universities and research institutes to support universitywide, systematic international activities. As previously mentioned, at that time the top comprehensive universities (both national and private) had a highly decentralized governance structure, and the role and power of university presidents and headquarters were highly limited. The SIH project aimed to establish a strong capacity for developing institutionwide international strategies and promoting internationalization using the headquarters of these top universities and research institutes. It also aimed to develop excellent practice models for strategic internationalization based on (1) the establishment of an international strategy headquarters and the reinforcement of the planning and implementation system; (2) strengthening the systematic support system for foreign researchers and students in terms of research, education, and the living environment; (3) training and securing university faculty and staff to cope with international activities; and (4) collecting and disseminating information, building networks, etc.

The government selected twenty universities and provided funds of 10–40 million JPY (77,000 to 309,000 USD) per institution per year for five years. The selection and monitoring of this highly limited funding scheme were conducted by the Program Committee under the JSPS. SIH was launched based on the idea that Japanese universities and research institutes should develop an internationally competitive research environment that attracts outstanding researchers from inside and outside Japan in response to the global competition for knowledge.

This scheme was in line with the science and technology policy under the Basic Plan for Science and Technology. Through the promotion and comprehensive analysis of these efforts at the member universities and research institutes, good-practice models were expected to be disseminated to a wider range

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of universities and research institutes, and accordingly contribute to the internationalization of their research environments.

Global 30

In addition to SIH, which was launched directly in line with the science promotion policy of MEXT, funding schemes for top research universities were initiated with the aim of internationalization being a key element of national HE policy. In 2008, the government issued a plan to invite 300,000 international students by 2020, to increase its current number of international students threefold, to help the country maintain its global share in the acceptance of the rapidly increasing number of international students in the world. In this scheme, the government stressed that universities should respond actively to globalization and started the Global 30 scheme, the original aim of which was to support thirty universities as leading models of university internationalization (Yonezawa and Shimmi 2016).

By the mid-2000s, the influence of world university rankings, especially the QS World University Rankings jointly published with *Times Higher Education* (THE) at the time, had already garnered a high amount of political attention. The basic components of the QS World University Rankings, such as academic and employer reputation, citations per faculty, and the international faculty and student ratios, are more or less related to the degree of internationalization of the universities. Due to the long tradition of the strong dominance of alumni from the top ten research universities in Japan's academic professional market and the academic inbreeding among them, the share of faculty members with degrees from other countries has been highly limited—even among these top universities (Yonezawa 2015). Therefore, the relationships of these top universities with international research communities have tended to be weak, negatively affecting their international academic reputation, their citations, and the international flow of faculty and students. In the mid-2000s, the number and share of programs for English medium instruction were limited in undergraduate and graduate programs. Furthermore, under the constraints of a national budget with a huge national debt, the government was reluctant to increase funding related to research activities aimed at fostering academic excellence at leading universities. Under these circumstances, the Program Committee of the Global 30 scheme under JSPS selected thirteen (seven national and six private) first-round participating universities out of the twenty-two universities that applied in 2009 by setting criteria stressing research capacity and large-scale academic activities at comprehensive universities, specifically targeting major indicators similar to those in the joint rankings by THE and QS at that time.

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For Global 30, the government provided 200 to 400 million JPY (1.7 to 3.5 million USD) per year; however, this funding was reduced each year. The government requested the selected universities to set up undergraduate and graduate programs taught in English to enhance their capacity to enroll international talent. In addition, the government requested that the selected universities strengthen their international relationships with overseas partner universities and industries by setting up overseas offices for recruiting international students.

However, Global 30 itself was cut back from its original plan to select thirty universities in total. In the original plan, in addition to the thirteen comprehensive universities selected in the first round, up to a total of thirty universities with high international profiles were intended to be selected and supported. However, faced with the financial crisis in 2008, the government abandoned the second-round selection. At the end of 2008, the change in the ruling party from the Liberal Democratic Party to the Democratic Party of Japan triggered comprehensive policy reviews, which resulted in budgetary cutbacks. The original Global 30 scheme aiming for international competitiveness was abolished as the result of a policy review. However, MEXT later continued this project by reorganizing it into a scheme to form international networks of universities. During the period ruled by the Democratic Party of Japan, HE policies aimed at widening access to HE and international study opportunities for fostering globally active human resources (HR) with Asian neighbors became a major policy agenda. Furthermore, in 2011, Japan experienced the Great East Japan Earthquake and Tsunami, which led to the Fukushima Daiichi Nuclear Power Plant disaster. Under these circumstances, the pursuit of industrial development through science and technology faced opposition from the general public.

Top 100 Ranking

Top Global University Scheme (Internationalization)

At the end of 2012, the Liberal Democratic Party returned as the ruling party under Prime Minister Shinzo Abe. In 2013, Abe declared his policy to have ten Japanese universities rank in the top 100 in the world in ten years (by 2023) as a symbolic indicator of the recovery of Japan's economy and society from disaster and economic stagnation (Yonezawa and Shimmi 2016). Under these initiatives, the national government launched the Top Global University (TGU) scheme as a ten-year project. It selected thirteen comprehensive universities that pursued comprehensive internationalization (Type A) and twenty-one universities with specific good practices in internationalization (Type B). Similar to the Global 30, the TGU should be understood as a scheme primarily aimed

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at encouraging the internationalization of leading Japanese universities as part of the budget of the Higher Education Bureau of MEXT. Thus, direct funding for research and academic excellence was not included. However, as this scheme was budgeted in direct association with the national policy to get ten universities into the top 100 in the world, MEXT and JSPS needed to demonstrate that this university internationalization scheme could contribute to improving the ranking positions of Japan's top universities. In other words, MEXT utilized cabinet level policies with university rankings for securing and justifying the budget allocation for internationalization of HE, while the responsibility to show a clear road map on how to achieve the targeted goal was entrusted to the applying universities.

Thus, Type A universities were requested to clarify their plan to improve their international position. Selection was based on their capacity to be globally competitive as comprehensive research universities. This scheme also asked that the universities submit detailed achievement goals, such as classes taught in English, the number and share of international students, and gender balance among all students and staff.

Furthermore, the total amount of funding for this scheme, which started in 2014 as around 500 million JPY (4.9 million USD) (Type A) and 200 to 300 million JPY (1.9 to 2.9 million USD) (Type B) for each university per year, gradually decreased by less than half each year. This rather small amount of funding clearly indicated that the money was for the promotion of internationalization among selected universities. In the latter half of this ten-year scheme, however, the national government requested that the plans of the participating universities specify how they plan to sustain these activities toward being globally competitive through their own efforts following the termination of the financial support of the TGU scheme in 2023.

The selection, monitoring, and assessment of the TGU program were conducted by the Program Committee under JSPS. The achievements of the universities were evaluated through interim assessments in 2017 and 2020, and the final assessment is planned for 2023. Some improvement in internationalization, such as an increase in the share of international students, student exchange, and classes in English, can certainly be acknowledged as a general pattern of the participating universities. However, this policy has become unrealistic, as it is unlikely (if not impossible) that ten universities will be ranked in the top 100 world university rankings by 2023.

Capacity Development of Research Universities (RU Program)

In line with its research promotion policies, the government also launched another AEI program in addition to TGU—the Program for Promoting the

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Enhancement of Research Universities (RU program)—as a ten-year project in 2013. In this program, nineteen universities (seventeen national and two private) and three national research institutes were selected, and each was granted 200 to 400 million JPY (2.0 to 3.9 million USD) annually. This program is operated by the Research Promotion Bureau under the auspices of MEXT.

The government recognized that Japan's research capacity was in relative decline internationally and the number of support staff per researcher was low compared to other countries. Thus, it argued that Japan's education and research system had become more complex and researchers were unable to fully devote themselves to research activities. The RU program supports university efforts to strengthen their research capabilities through the employment of university research administrators (URAs) responsible for research strategies and intellectual property management at universities in addition to intensive research environment reforms to help researchers concentrate on their work. In this program, the government aimed to increase the number of universities with world-class research activities. This scheme also encourages income generation along with industry and project acquisition-based research funds to help universities sustain the research administrator system via their own funding.

In the RU program, candidate universities were selected based on the following indicators of research performance: the number of Grants-in-Aid for Scientific Research (the national research fund provided through JSPS) adopted per researcher; the rate of taking on young researchers for Grants-in-Aid for Scientific Research; the amount of Grants-in-Aid for Scientific Research allocated per researcher; the number of adoptions of Grants-in-Aid for Scientific Research for supporting academic book publications; the number of Research Center Formation Projects; the number of Strategic Research Promotion Projects (the Creation of New Technology Seeds); the percentage of Top 10 percent highly cited papers to the total number of academic journal articles; the ratio of international coauthored articles to the total number of academic journal articles; R&D status (the amount of joint and contract research with private companies and the growth rate to date; the amount of joint or funded research with private companies and the growth rate to date); and the status of technology transfer (the amount of income from patent licensing and the growth rate to date).

The RU program should be understood as an AEI for motivating universities to improve their research capacity. Universities were expected to submit their research strategy plans toward this goal. However, this program itself did not provide grants for the research. Furthermore, the program is in line with the science promotion policy under the Research Promotion Bureau of MEXT

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and does not have a direct relationship to the TGU scheme, which is mainly focused on internationalization under the Higher Education Bureau of MEXT. However, the selected universities in the RU program overlap considerably with the universities selected under the TGU scheme. Thus, for the leading research universities, the application and implementation of these two mutually independent governmental schemes from different bureaus of MEXT could result in inconsistency and an administrative burden in developing and implementing a university strategy for academic excellence.

Distinguished Status

Faced with increasing international competition for academic excellence, the concept of selecting a very limited number of top universities and developing them toward achieving world-leading status became essential. A counterargument among university leaders and experts also existed. The decline in research performance was more palpable among middle-tier universities than top-tier universities, and this tendency may have done critical damage to the knowledge infrastructure in Japan (Toyoda 2019). However, there was also a sense of crisis among university leaders and policymakers that even top Japanese universities and research institutes would fall out of the top global and regional university leagues. This scenario would be critically harmful, as the Japanese academic community as a whole would lose access to frontier knowledge. The increased share of project- and performance-based funding within the total government funding increased the disparity in funding opportunities among universities—generally in favor of the limited number of top research universities (Fukui 2021a).

The national policies differentiating the functions of universities have gradually strengthened—partly to protect a handful of top research universities through the concentration of resources. In 2005, the Central Council for Education (CCE) under the auspices of MEXT issued a report called "The Future of Japan's Higher Education," suggesting that universities should choose their specific functions autonomously. The government indicated seven types of functions, with "key institutes of world-class research and education" being the first. In the process of setting midterm goals and plans for obtaining government support for the operational expenditure in 2010, each national university published its mission (e.g., strengths, characteristics, and social roles) based on its research performance, educational achievements, and industry-academia collaboration.

In setting midterm goals and plans in 2016, all national universities were required to choose one of the following three categories for performance

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assessment: (1) the promotion of HR development and research that meets the needs of local communities, (2) the promotion of the formation of excellent education and research centers and networks in specific fields, and (3) the promotion of outstanding education and research, in line with the world's top universities. In 2021, a total of 20 billion JPY (182 million USD) was allocated to these three categories. Based on the universities' individual decisions, sixteen of the eighty-six chose category 3. Category 3 universities were required to publish their strategies for becoming one of the world's top universities; the government then compared the performances of national universities within the same category. However, the key performance indicators (KPIs) for assessing the achievement of goals and plans were decided by the individual universities. Thus, this assessment scheme was not designed for the direct comparison of universities, but rather for a assessment of the respective missions and contexts of these universities.

Among policymakers and government officials, however, there were strong voices claiming that public funding for universities should be allocated based on a common set of KPIs. In 2019, the Japanese government began allocating a portion of annual operational funding to national universities based on a limited number of common KPIs. In 2021, thirteen indicators were selected as common KPIs for the allocation of 100 billion JPY (972 million USD) of 927 billion JPY (9 billion USD) in basic operational funds to the eighty-six national universities. These indicators were mostly related to academic excellence (i.e., employment and postgraduate studies, PhDs awarded, curriculum development, the ratio of young researchers, the number of top 10 percent highly cited papers per cost of subsidy for operation, the number of research achievements per full-time faculty member, the amount and number of Grants-in-Aid for Scientific Research per full-time faculty member, the amount of commissioned and joint research received per full-time faculty member, staff and payroll management reform, the fostering of a diverse environment, accounting management reform, the acquisition of donations and other funds, and facility management reform). The allocation of the funding to respective universities is decided by these measures set by the government without negotiation.

The amount of funding for these three categories of functions chosen by the universities was reduced, while the funding based on these common KPIs set by the government was increased: from 30 billion JPY (290 million USD) and 70 billion JPY (676 million USD) in 2019 to 20 billion JPY (194 million USD) and 100 billion JPY (972 million USD) in 2021. Thus, in 2021, of the total public funding for the basic operation of national universities (which is equivalent to 1.08 trillion JPY (10.5 billon USD)), 120 billion JPY (1.2 billion USD) was allocated based on functional differentiation and the KPIs. Through these

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short-term changes, the government substantially strengthened its funding based on performance, as assessed by the common KPIs linked with academic performance (Hayashi et al. 2020).

Designated National Universities

In 2017, the national government created a new official legal category of top research universities, DNUs. Which are legally distinguished from other national universities under the National University Corporation Act (Yonezawa 2019). The introduction of a legally distinguished category among universities was the first such event following the abolishment of the imperial university system after World War II.

The DNU scheme started in 2017 as an authorization process for research universities aiming to be among the top universities in the world. The National University Corporation Act states that, after hearing the opinions of the National University Corporation Evaluation Committee, the minister of MEXT may authorize a "designated national university corporation." DNUs are expected to develop to a considerable extent their own education and research activities in alignment with the highest global standards. They should have educational and research achievements, management and administration systems, and a financial capacity suitable for world-class universities. While the DNU scheme was linked to the midterm goals and plans of national universities within a six-year period, no official regulations were put in place for the deprivation of the special status.

DNU was launched to foster world-class universities that can compete with the top universities in the world. When the government started DNU, it required the applying universities to rank the highest in Japan in terms of "research capabilities," "collaboration with society," and "international collaboration." These categories were exemplified by the number of newly adopted Grant-in-Aid for Scientific Research projects, the percentage of top 10 percent highly cited papers to the total number of academic journal articles, the percentage of revenue from funded and joint research, the ratio of revenue from endowments, the percentage of income from patent licensing, the ratio of internationally coauthored papers, and the ratio of international students and Japanese students sent overseas (undergraduate and graduate).

Based on these KPIs, seven universities were allowed to apply for this status in 2017. These applicants were asked to submit their own respective strategic plans for developing their capacity as world-class universities. The format itself was flexible, and an expert committee, which included international members, performed the assessment. This assessment took place through document assessment, interviews, and site visits. If a university were not

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approved, it would be allowed to reapply. Following the first approval of three universities in June 2017, it was not until September 2019 that all the applying universities were approved. The government later allowed three additional universities to apply, starting with their midterm goals and plans for 2022, with all three approved by November 2021. The national government then stated it had no plan to add further DNUs until 2027.

The governance of national universities has been developed by national regulations as a standardized framework to ensure a certain level of institutional autonomy and allow national government monitoring. In principle, a national university is operated by a national university corporation. Since 2019, however, it has been possible for two or more national universities to be jointly operated by an alliance body (e.g., National Higher Education and Research System). For example, Nagoya University, a DNU, operates jointly with Gifu University under the Tokai National Higher Education and Research System established in 2020.

These national university corporations are required to publish their midterm goals and plans with detailed institutional strategies, achievement goals, and plans—including KPIs—every six years. The achievement of these plans and goals is assessed by the National University Corporation Evaluation Committee under MEXT. The ministry establishes an evaluation subcommittee for the DNUs and their operational bodies, which are designated national university corporations (DNUCs). For the universities, their strategic goals and plans for achieving world-leading status are required, in addition to their standardized midterm goals and the plans required from all national universities.

The impact of the DNU scheme on the participating universities—at least in terms of direct public funding—has remained nominal thus far. The authorization of DNUs does not automatically ensure a fixed amount of funding, although some advantages of applying for various governmental funding schemes could be indirectly suggested. In 2022, the government revealed its plan to distinguish DNUs from other national universities in performance-based operational budgeting. That is, from 2022, the ten DNUs will compete against one another within the advantaged budgetary allocation for the universities based on their performance in education, research, and management.

The DNU scheme is more focused on providing advantageous regulatory treatment in deregulation to support the entrepreneurial challenges faced by the universities through negotiations with the national government. The idea behind this is based on the benchmarking exercises of world-leading research universities conducted by the government and top Japanese universities. Using quantitative and qualitative benchmarking exercises, world-leading universities, especially the top US universities, have a strong autonomous financial

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capacity based on endowments and various income sources established via collaboration with industry and social engagement. The policymakers of Japan paid special attention to the experiences of state universities in the US, which were facing a drastic decrease in the share of state subsidies in the 1980s and 1990s while appearing to remain successful in terms of academic excellence based on the development of their financial capacity to attract other sources of income. Thus, in theory, the role of the government is to encourage the top Japanese universities to become financially autonomous with a strong management capacity to avoid relying on annual governmental subsidies for operation.

However, the deregulation and advantageous treatment provided by the government are mostly based on the discrete and ad hoc requirements that arise through negotiations between DNUs and the government. For example, in 2020, the University of Tokyo issued university bonds for 20 billion JPY (194 million USD) for forty years, which were enabled by regulatory amendments in response to the university's request. Universities have to obtain authorization from the government to issue a university bond, and the government indicates that this authorization starts with DNUs having a strong financial base. A few national universities have obtained a credit rating for the preparation of issuing their own university bonds.

National "University Fund" Scheme

Most external stakeholders and university leaders admit that the transformation of the governance and management of Japanese top universities and research institutes is key to their obtaining world-class status. However, it is also widely recognized that a substantial and drastic increase in public investment in academic excellence is necessary.

In 2021, the Japanese government launched the University Fund, a national fund for supporting top universities toward global competitiveness in terms of academic excellence. The government approved 4.5 trillion JPY (44 billion USD) for the 2021 national budget and is planning to fund up to 10 trillion JPY (97 billion USD) in the near future.

The idea of the University Fund originated from a sense of crisis among leaders of universities, government, members of the National Diet, and industry, acknowledging a wide gap in endowment and public research contracts, especially compared with top US universities. If top Japanese universities attempt to develop their own endowments, it will be a long time before they reach the level of current top US universities. If the government provides 97 billion USD in funding, top Japanese universities could more quickly achieve the same status as US universities.

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The University Fund is managed by the Japan Science and Technology Agency (JST), and the government utilizes the operational gains of this fund to support academic excellence among its top universities. The University Fund was established by utilizing the scheme of government Treasury investments and loans (national debt). Thus, the government is planning to pay it back in fifty years. In the long run, Japanese universities are expected to develop their own endowments.

In terms of the usage of the University Fund, the committees set up under the Cabinet Office and MEXT had intense discussions on how top Japanese universities could become globally competitive. They compiled a comprehensive analysis of the Japanese and world-leading research universities using documentation analysis, quantitative and qualitative benchmarking, and interviews with the top university leaders from the US and the UK.

In January 2022, the government released a proposal to support universities utilizing the University Fund and revealed plans for a new program called the International Excellent Research University (IERU) scheme. Utilizing the yield of the University Fund, each selected university will receive tens of billions JPY (hundreds of million USD) per year, which is more than 100 times the amount of annual support by the TGU or RU programs and also 20 percent or more of the annual operational expenditure of the University of Tokyo (around 2.2 billion USD in 2020), the national university with the largest financial expenditure. To realize this amount, the number of universities to be selected as IERUs will be extremely limited: five at most from national, local public, and private universities.

While details on the criteria for submission and selection have not yet been decided, it is certain that the government, especially CSTI and MEXT, will carefully monitor and assess the governance, finance, and academic performance of the IERUs.

Conclusion and Discussion

This chapter examined a series of AEIs implemented in Japan over the last quarter-century—initiatives that were small, underfunded, incoherent, and frequently changing. The Japanese government implemented AEIs to help its top universities become world-class—or, more specifically, move up in the rankings that have become globally influential since the 2000s. However, Japanese AEIs have not been realized as single, large-scale initiatives; they have been more of a series of trial-and-error initiatives—sometimes from the governmental side and sometimes based on the request of universities (or their reluctance to participate). The numerical targets set as the national achievement goals,

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such as the Toyama Plan's thirty world-class universities in 2001 and ten universities within the top 100 in 2013, were announced suddenly in a very top-down manner, without supportive analysis or road maps; it was the applying universities that were required to show how they planned to achieve these goals. The selection and concentration policy has not provided a massive increase in the funding of top universities; rather, it was a device to suppress criticism of government policies. Top university leaders had to submit to the series of AEIs to maintain their financial support from the government, and they have not been able to make direct criticisms, which would lead to their dropping out of the government's short list of flagship universities.

Japan's intention in the 1990s was to initiate investment in science and technology for future national development. However, the return on its investment in top universities and research institutes has not been sufficient to boost the Japanese economy further. In the 2000s and 2010s, government policies on HE and science, technology, and innovation emphasized the role of academic excellence at research universities and institutes. However, because of the serious budgetary constraints under the long-term stagnation of the economy, public budgeting for the basic operation of these national universities and research institutes decreased each year—even among the top universities and institutes. Thus, the top research universities and institutes have diversified their income resources through, for example, university-industry cooperation, donations, and contract research to make up for the decrease in basic budget support from the government. In general, this increased service engagement has negatively affected research performance, as academics have to spend more time and effort on these activities rather than on their own research (which is directly linked to academic excellence).

Nevertheless, through a series of interactions between the government and top universities and research institutes, there has been a strengthening of the mutual understanding of the desired image of world-class universities and leading research institutes. The involvement of a wide range of ministries and government officials (e.g., HE, science, technology and innovation, finance, economy, and industry) sometimes confounds this discussion; however, the general understanding of academic excellence and its role in society is progressing.

Considering the long-term prospects of economic decline based on the decreasing population in Japan, there is a consensus that the achievement or even the maintenance of academic excellence by the top universities and research institutes in Japan is a difficult challenge. Japan has approached this challenge through internationalization and the implementation of management reforms at its top universities and research institutes. However, it is becoming

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clear that the involvement of a wide range of stakeholders from the academic community, government, and industry in policy formation and implementation for science, technology, and innovation is necessary. The idea of using top research universities and research institutes as key components of a national innovation ecosystem should be realized as a wider framework facilitating their engagement at the global, regional, national, and local levels.

A new approach to AEIs based on institutional bonds and the University Fund scheme does not appear to be the ultimate solution. Bonds have to be paid back at the end of their term, and there is always a risk of failure in fund operations. Japan's universities (and even the government) do not have an established system or the required HR for high-performing funding operations. However, if everything goes as planned by the government, the very limited number of top research universities in Japan may be able to secure large amounts of funding for research to help strengthen their institutional capacity to become world-class.

The Japanese case indicates that AEIs in a mature—or even declining—economy with already-established academic excellence (at least to some degree) cannot function as individual, stand-alone public investments in research. Although Japan's approach is far from successful for AEIs, it is becoming more comprehensive, based on the overall goal of developing a national knowledge and innovation ecosystem.

The fragmented imposition of booster-type policy schemes without sufficient funding, as discussed in this chapter, is not limited in AEI policies, but it is commonly seen in a wide range of sectors in Japan. The long-term economic stagnation and increasing politicization of national policies in general are also significantly damaging to social and international trust in Japanese government policies in HE. The never-achieved policy goal of university rankings is a typical example of populist statements where the universities get more criticism for their underperformance than the government does as the policy designer.

The transformation of top research universities into more international and entrepreneurial institutions has steadily progressed. The University Fund scheme could be an innovative solution to this challenge, but more fundamental, consistent, and long-term policies for AEIs, as well as substantial institutional autonomy, are necessary for establishing academic excellence.

References

Aoki, Eiichi. 2021. *MEXT*. Tokyo: Chuko-Shinsho.

Arima, Akito. 1992. Underfunding of basic science in Japan. *Science* 258 (5082): 590–592.

Downloaded from http://direct.mit.edu/books/book-pdf/2218384/book_9780262376693.pdf by guest on 18 November 2024

Blinco, Priscilla Mary Anne. 1993. Persistence and education: A formula for Japan's economic success. *Comparative Education* 29 (2): 171–183.

Fukui, Fumitake. 2021a. The financing of higher education in Japan. In *Handbook of Higher Education in Japan*, edited by Paul Snowden, 109–121. Amsterdam: Amsterdam University Press.

Fukui, Fumitake. 2021b. Research universities: Science, technology, and innovation policy. In *Handbook of Higher Education in Japan*, edited by Paul Snowden, 275–289. Amsterdam: Amsterdam University Press.

Hayashi, Takayuki, Ttakahiro Saito, Kensuke Mizuta, Akiyoshi Yonezawa, Mari Kawamura, and Nika Ando. 2020. *Integrated Reform of University Evaluation and Funding*. Tokyo: National Graduate Institute for Policy Studies. https://grips.repo.nii.ac.jp/?action=repository_uri&item_id=1821&file_id=23&file_no=1 (in Japanese).

İmrohoroğlu, Selahattin, Sagikri Kitao, and Tomoaki Yamada. 2019. Fiscal sustainability in Japan: What to tackle? *Journal of the Economics of Ageing* 14: 100205. https://www.sciencedirect.com/science/article/pii/S2212828X19300921.

Itoh, Akihiro. 2002. Higher education reform in perspective: The Japanese experience. *Higher Education* 43: 7–25. https://doi.org/10.1023/A:1012995409254.

Kim, Ki-Seok. 2007. A great leap forward to excellence in research at Seoul National University, 1994–2006. *Asia Pacific Education Review* 8 (1): 1–11.

Kuroda, Reiko. 2002. *Nurturing Science*. Tokyo: Chuko Shinsho.

Low, Morris, Shigeru Nakayama, and Hitoshi Yoshioka. 1999. *Science, Technology and Society in Contemporary Japan*. Cambridge: Cambridge University Press.

Moon, Mugyeong, and Ki-Seok Kim. 2001. A case of Korean higher education reform: The Brain Korea 21 project. *Asia Pacific Education Review* 2 (2): 96–105.

Nakayama, Shigeru, and Morris F. Low.1997. The research function of universities in Japan. *Higher Education* 34: 245–258. https://doi.org/10.1023/A:1003016515514.

National Institute for Science and Technology Policy (NISTEP). 2021. *Digest of Japan Science and Technology Indicators 2021*. Tokyo: NISEP.

Nature Index. 2017. *Nature Index 2017 Japan*. https://www.nature.com/collections/hmjqglbjjn/.

Nature Index. 2019. *Nature Index 2019 Japan*. https://www.nature.com/articles/d41586-019-00829-z.

Odagiri, Hiroyuki. 2006. Advance of science-based industries and the changing innovation system of Japan. In *Asia's Innovation Systems in Transition*, edited by Bengt-Ake Lundvall, Patarapong Intarakumnerd, and Jan Vang, 200–226. Cheltenham, UK: Edward Elgar Publishing.

Ogawa, Yoshikazu. 2002. Challenging the traditional organization of Japanese universities. *Higher Education* 43 (1): 85–108.

Onday, Özgür. 2019. Japan's Society 5.0: Going beyond Industry 4.0. *Business and Economics Journal* 10 (2): 1–6.

Raymo, James M., and Akihisa Shibata. 2017. Unemployment, nonstandard employment, and fertility: Insights from Japan's "Lost 20 Years." *Demography* 54 (6): 2301–2329.

Seong, Somi, Steven W. Popper, Charles A. Goldman, and David K. Evans. 2008. *Brain Korea 21 Phase II: A New Evaluation Model*. Santa Monica, CA: RAND Corporation.

Toyoda, Nagayasu. 2019. *The Crisis of the Science Nation*. Tokyo: Toyo Keizai.

Tsuchimochi, Gary Hoichi. 1993. *Education Reform in Postwar Japan: The 1946 US Education Mission*. Tokyo: University of Tokyo Press.

Yang, Rui, and Anthony Welch. 2012. A world-class university in China? The case of Tsinghua. *Higher Education* 63 (5): 645–666.

Yonezawa, Akiyoshi. 2003. Making "world-class universities": Japan's experiment. *Higher Education Management and Policy* 15 (2): 9–23.

Yonezawa, Akiyoshi. 2015. Inbreeding in Japanese higher education: Inching toward openness in a globalized context. In *Academic Inbreeding and Mobility in Higher Education: Global*

Downloaded from http://direct.mit.edu/books/book-pdf/2218384/book_9780262376693.pdf by guest on 18 November 2024

Perspectives, edited by Maria Yudkevich, Philip G. Altbach, and Laura E. Rumbley, 99–129. London: Palgrave Macmillan.

Yonezawa, Akiyoshi. 2019. National university reforms introduced by the Japanese government: University autonomy under fire? In *The Governance and Management of Universities in Asia*, edited by Chang Da Wan, Molly N.N Lee, and Hoe Yeong Loke, 81–93. London: Routledge.

Yonezawa, Akiyoshi. 2021. Reimaging university identities through rankings in Japan: The transformation of national policies and university behaviours in the broader East Asian context. In *Research Handbook on University Rankings: Theory, Methodology, Influence and Impact*, edited by Ellen Hazelkorn and Georgiana Mihut, 231–246. Cheltenham, UK: Edward Elgar Publishing.

Yonezawa, Akiyoshi, Sheng Ju Chen, Jisun Jung, and William. Y. W. Lo. 2016. East Asia: Catchup and identity–developments in and impacts of university rankings. In *Global Rankings and the Geopolitics of Higher Education*, edited by Ellen Hazelkorn, 140–151. London: Routledge.

Yonezawa, Akiyoshi, Hugo Horta, and Aki Osawa. 2016. Mobility, formation and development of the academic profession in science, technology, engineering and mathematics in East and South East Asia. *Comparative Education* 52 (1): 44–61.

Yonezawa, Akiyoshi, and Futao Huang. 2021. World-class university policies and rankings in transition: A comparative study of the People's Republic of China and Japan. In *World-Class Universities*, edited by Nian Cai Liu, Yan Wu, and Qi Wang, 140–53. Leiden, Netherlands: Brill. doi.org/10.1163/9789004463165_007.

Yonezawa, Akiyoshi, and Yukiko Shimmi. 2016. Transformation of university governance through internationalization. In *Matching Visibility and Performance*, edited by Nian Cai Liu, Ying Cheng, and Qi Wang, 103–118. Rotterdam, Netherlands: Sense Publishers.

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4

Malaysia's Quest for Excellence in Higher Education

Chang Da Wan and Tien Hong Lim

Introduction

The quest for academic excellence has been synonymous with the development of higher education (HE) in Malaysia over the last two decades. "Excellence" has featured extensively in the strategic documents as the benchmark for intended outcomes of HE. Soon after the Ministry of Higher Education was first established in 2004 as a separate ministry, the minister of higher education commissioned a committee to study, review, and make recommendations concerning the development and direction of HE in Malaysia. When doing so, he clearly stated that "the Government of Malaysia is firm in its resolution to ensure the reemergence and continuance of excellence in HE in the country" (MoHE 2006, xv). The report of the committee was titled "Towards Excellence" and became a major input to the National HE Strategic Plan 2007–2020 (PSPTN). (PSPTN is the Malay acronym for *Pelan Strategik Pendidikan Tinggi Negara*, which was formulated to transform Malaysian HE into a system producing human capital with a first-class mindset and to establish Malaysia as an international hub of HE excellence. PSPTN became the inaugural strategic document that charts Malaysia's quest for academic excellence.)

To comprehensively understand Malaysia's quest for excellence in HE, this chapter is divided into two parts: systemic and institutional. First, we explore chronologically the academic excellence initiatives (AEIs) that the government launched at the system level, from PSPTN to the current Malaysia Education Blueprint 2015–2025. These two documents represent the AEIs of the Malaysian HE system.

Second, at the institutional level, we compare and contrast two AEIs in the form of case studies of two public universities: the Accelerated Programme for Excellence (APEX), at Universiti Sains Malaysia; and High Impact Research (HIR), at Universiti Malaya. Briefly, the main reason we choose to focus on

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institutional initiatives is that the two excellence initiatives in two of the most prominent and oldest universities in Malaysia took drastic and contrasting directions. APEX was one of the top-down initiatives introduced as part of the national PSPTN plan, where universities were invited to submit proposals to transform themselves into world-class universities. In the 2008 call for proposals under APEX (the only call to date), Universiti Sains Malaysia was the sole institution. Conversely, HIR was a bottom-up program that was proposed by Universiti Malaya through the Ministry of Higher Education and accepted by the government. Hence, APEX and HIR are uniquely associated with Universiti Sains Malaysia and Universiti Malaya, respectively. Importantly, they provide many valuable insights into Malaysia's quest for excellence in HE generally.

Higher Education in Malaysia

HE predated the independence of Malaya and the formation of the country. The first university was established by the British in 1949, and it was so well recognized that at its Foundation Day, twenty-five congratulatory messages from renowned universities around the world, including the universities of Oxford, Cambridge, Edinburgh, Harvard, Chicago, Otago, British Columbia, Hong Kong, Western Australia, Indonesia, Nagpur, and Ceylon, were read aloud (Khoo 2005). Until the independence of Malaya in 1957 and even a decade afterward, Universiti Malaya, with its two campuses (Kuala Lumpur and Singapore), was the only university in the country.

In 1967, the Higher Education Planning Committee, which was tasked with reviewing the arrangements for HE, made recommendations to establish more universities to cater to the need to prepare more graduates as part of nation-building and national development. Universiti Sains Malaysia was the first university established by the Malaysian government, followed by three other public universities.

The next major wave of expansion in HE took place in the mid-1990s. The enactment of the Private Higher Education Institutional Act 1996 (Act 555), which legalized private HE institutions, opened the floodgates to allow the rapid expansion of HE through the growth of both public and private universities. Within two years of Act 555, the gross enrollment ratio (GER) for tertiary education doubled from 11 percent in 1995 to 22 percent in 1998.

As of March 2021, there were 20 public and 51 private universities in Malaysia. In addition, there are 10 international branch campuses, 39 private university colleges, 335 private colleges, 36 polytechnics, and 104 community colleges that are publicly funded. In total, there were 1.3 million students enrolled in

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HE in 2019, of which 43 percent were at public universities, 25 percent at private universities, 2 percent at international branch campuses, and 9 percent and 21 percent at public and private HE institutions, respectively (MoHE 2020). With a GER for tertiary education of 44 percent, Malaysia has one of the highest enrollment rates in the region.

The Start of the Quest: The National Higher Education Strategic Plan

PSPTN marks the beginning of the quest for excellence in the Malaysian HE system. The strategic plan aims to transform HE in Malaysia to produce human capital with a first-class mentality and to establish Malaysia as an international hub of HE excellence (MoHE 2007b). Seven thrusts were outlined to guide the HE system toward the stated objectives:

Thrust 1: Widening access and increasing equity
Thrust 2: Improving the quality of teaching and learning
Thrust 3: Enhancing research and innovation
Thrust 4: Strengthening HE institutions
Thrust 5: Intensifying internationalisation
Thrust 6: Enculturating lifelong learning
Thrust 7: Reinforcing the Ministry of Higher Education delivery system

The implementation of PSPTN was then operationalized into four phases, each with a specific action plan:

Phase 1: Laying the foundation (2007–2010)
Phase 2: Strengthening and enhancement (2011–2015)
Phase 3: Excellence (2016–2020)
Phase 4: Glory and sustainability (beyond 2020)

While each thrust represented an area critical to the development of HE in Malaysia, specific measurable targets were clearly stated for each thrust in incremental form across the four phases. For instance, in thrust 1, on access and equity, the targets at the end of phase 1 were 40 percent of the 17–23-year-old cohort to access tertiary education and 27 percent of the workforce to obtain HE. The targets for phase 2 became 45 percent and 30 percent, and for phase 3, they were 50 percent and 33 percent, respectively.

For thrust 2, on quality teaching and learning, the specific targets were to have 21,000 PhD holders in Malaysia, an innovative and relevant curriculum,

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and graduate employability at the end of phase 1; 35,000 PhD holders in phase 2; 50,000 PhD holders in phase 3; and finally ending up with 100,000 PhD holders. On the description of curriculum and graduates, incremental adjectives were used to describe progress: marketable to versatile to excellent to globally competitive graduates, and innovative to dynamic, in tandem with technological changes to excellence to a cutting-edge curriculum. Yet what is missing in the description of thrust 2 is how the number of PhD holders in the population corresponds to the quality of teaching and learning in universities, as well as how the adjectives used correspond to the intended changes.

Similarly, the targets prescribed in thrust 3 were measurable targets that increased across the three phases, such as having fifty researchers, scientists, and engineers (RSE) per 10,000 workers, 5 percent of research output commercialized, and having five Centres of Excellence receiving international recognition by the end of phase 1. At the end of phase 2, the targets were increased to seventy RSE, 8 percent commercialization, and ten centers, respectively, as well as to have a sixth research university. By the end of PSPTN, 100 RSE, 10 percent commercialization, and twenty centers were expected to be achieved.

Thrust 4 was aimed at strengthening HE institutions, and the only targets were the number of universities in *Times Higher Education* (THE) rankings. By 2010, three universities were expected to be in the top 200, and one of those three in the top 100. By 2015, two universities were to be in the top 100 and one in the top 50; and by 2020, three universities were to be in the top 100 and one of those three in the top 50. In phase 4, which does not have an end date, PSPTN aspired for two Malaysian universities to be in the top 50.

On top of the ranking targets, thrust 4 targeted income generation for public universities. Public universities, which in this case were divided into research universities and focused/comprehensive[1] universities, were expected to generate 20 percent and 15 percent of their operational expenditures, respectively, by the end of phase 1. Along the way, income generation from developmental expenditures was also included. The flip side of these targets was a reduction of government funding for these public universities. The expectation by the end of phase 4 was for research universities to generate 40 percent and 15 percent of their operational and developmental expenditures, respectively, while for other universities, the goal was 30 percent and 10 percent, respectively.

Likewise, the targets for thrust 5 on internationalization were simple measures of international students and staff. By 2010, the target was to have 100,000 international students and 5 percent international academics in research universities. By 2015, 150,000 international students, 10 percent international staff, and 3 percent of international students in competitive courses like

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medicine and engineering in public universities. The end target was to achieve 200,000 international students and 15 percent international staff.

Only thrusts 6 and 7 did not have measurable targets, but they are more geared toward introducing key programs and projects to promote lifelong education and reinforce the delivery system of the Ministry of Higher Education.

In conclusion, it is important to recognize that PSPTN marks the official pronouncement for Malaysian HE to embrace the ideology of neoliberalism, introduce New Public Management (NPM) to public universities, and transform the Malaysian HE system and institutions to be ranking-centric, with clear targets directly linked to international university rankings (Wan, Morshidi and Abdul Razak 2020).

However, several crucial caveats about PSPTN need to be highlighted. First, the plan almost exclusively focused on public universities, and insufficient and inadequate attention was paid to private HE, despite the private sector witnessing exponential growth and becoming an important part of HE in Malaysia (Harun et al. 2014). In other words, the pursuit of excellence highlighted in PSPTN was very much enticing public universities to enter the university rankings.

Second, while PSPTN claimed to be contextualized in various national strategic plans, such as the five-year Malaysia Plans and Vision 2020, HE was discussed in a disjointed manner. For instance, the National Education Philosophy, which the "Towards Excellence" report aptly highlighted as a critical aspect to guide the development of HE in Malaysia, was noticeably absent from PSPTN. As such, this lack of context resulted in lofty and unrelated measurable indicators becoming targets of the plan.

Third, although it is commendable for PSPTN to be accompanied by Action Plans to guide its implementation (MoHE 2007a), the approach taken was very much fashioned after NPM in the form of Critical Agenda Projects (CAPs). The Action Plan for phase 1 began with five institutional pillars and five CAPs, where APEX was one of the latter. At the end of phase 1 of PSPTN, there were twenty-three CAPs. The Action Plan for phase 2 continued with more measurable targets for each of these CAPs, along with a timeline to meet these targets. Importantly, each project was also given a secretariat headed by an academic alongside administrators, other academics, and other stakeholders. The secretariat became accountable for the implementation of the agenda within the CAP to achieve its objectives. A Project Management Office was set up in the Ministry of Higher Education to coordinate all CAPs toward achieving the targets and goals of PSPTN.

Fourth, it is important to recognize that in 2013, during the midterm review, the only target achieved was in thrust 1, where 48 percent of the 17–23-year-old

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cohort accessed tertiary education in 2012, which exceeded the target of 40 percent (Harun et al. 2014). All the other targets, including the number of universities in global university rankings and the number of international students and staff, fell short of the 2010 targets before an unexpected detour took place in 2013.

The Unexpected Detour: Malaysia Education Blueprint (Higher Education)

Three interrelated events in 2013 changed the quest for excellence in Malaysian HE. First, PSPTN was approaching its halfway mark, and a team was commissioned by the Ministry of Higher Education to conduct a review of the plan. Second, following the general election in 2013, the Ministry of Higher Education was merged into the Ministry of Education in the new cabinet, and thus it reverted to the ministerial setup that had been in place before 2004. Third, the Ministry of Education, after incorporating the Ministry of Higher Education, launched the Malaysia Education Blueprint (Preschool to Post-Secondary Education) 2013–2025 (MEB), and questions began to emerge as to whether the PSPTN needed to be bridged with the blueprint or a new HE blueprint was required now that all levels of education were under a single ministry. Hence, the decision upon receiving the review report of PSPTN was to create the Malaysia Education Blueprint (Higher Education) 2015–2025 (MEBHE) (MoE 2015).

MEBHE, although claimed to be a continuation of PSPTN, was more aligned to the structure of the preschool and school blueprint (MEB) than the strategic plan, where the HE blueprint has five system aspirations and six student aspirations. The system aspirations were access, quality, equity, unity, and efficiency; the student aspirations were knowledge, thinking skills, language proficiency, national identity, leadership skills, and ethics and spirituality. However, unlike PSPTN, not every system aspiration has been assigned targets.

Three of the five system aspirations have measurable targets to be achieved by 2025. Access is expected to reach 53 percent of tertiary education enrollment, 70 percent of the total HE enrollment rate, 8 percent of the master's and PhD enrollment rates, and 1.1 million new places, mainly in technical and vocational education and training (TVET), private institutions, and online learning. Quality is aimed to achieve more than 80 percent graduate employability, Malaysia being ranked among the top 25 in the U21 research output ranking, having 250,000 international students, one university in the Asian top 25, two universities in the global top 100, and four universities in the global top 200. Efficiency is to be measured by maintaining government spending per student in public institutions and Malaysia being ranked among the top 25 in the U21

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ranking. As for aspirations of equity and unity, the declared aims are no underrepresentation of disadvantaged communities and the full representation of all ethnicities in HE. No targets or measures were provided for student aspirations.

In addition, MEBHE outlined ten Shifts that are intended to spur continued excellence in the HE system in achieving the system and student aspirations. All the Shifts "address key performance issues in the system, particularly with regard to quality and efficiency, as well as global trends that are disrupting the higher education landscape" (MoE 2015, E-11). Within each Shift, there is a narrative description of what the attainment or achievement of the Shift will look like and a list of initiatives that are expected to help achieve the outcome. Interestingly, the only measurable indicator that the ten Shifts have is the target to enroll 250,000 international students by 2025 under Shift 8: Global Prominence.

Although MEBHE has far fewer measurable targets and indicators than PSPTN, this system-level initiative continues to be strongly driven by the ideology of neoliberalism and NPM (Wan, Morshidi, and Abdul Razak 2020), especially with the conceptualization of excellence.

First, instead of having Action Plans like PSPTN, MEBHE adopted corporate management models to produce transformation program books, more fashionably known as "playbooks," which are color coded to indicate various aspects. This idea was adopted from the Government-Linked Company High Performance. The University Transformation Program includes (1) the Green Book on Enhancing University Board Governance and Effectiveness, (2) the Silver Book on Enhancing Academic Productivity and Cost Efficiency, (3) the Orange Book on Strengthening Academic Career Pathways and Leadership Development, and (4) the Purple Book on Enhancing University Income Generation, Endowment and Waqf. These corporate governance mechanisms, developed for profit-driven institutions, have been used as a template to chart the transformation and governance of universities, despite the latter existing for an entirely different purpose.

Second, MEBHE gives prominence to "empowered governance," which refers to balancing autonomy and accountability. Accountability is tied to performance and auditing, which further translate into key performance indicators (KPIs). In this respect, various instruments that are promoted in MEBHE, such as the Malaysian Research Assessment (MyRA) and the Rating System for Malaysian HEIs (SETARA), are instruments constructed entirely from metrics and indicators, whereby they became KPIs of institutions and subsequently cascade down to individual academics to measure performance. However, these performance measures are not tied to a specific source of

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funding, as the funding model for public universities is not performance-based, but rather one-liner cost-based. Hence, these performance measures were more geared toward competition for prestige and promotion purposes. Even quality assurance and accreditation instruments championed by the Malaysia Qualifications Agency (MQA) are highly operationalized into mappings of measurable outcomes under the pretext of quality in academic programs.

Third, also relating to "empowered governance," MEBHE proposed the separation of academic responsibilities from the administrative and management responsibilities of leadership in public universities. The proposal advocated the creation of "managed professionals" and meant a university hierarchy in which the academic function was downgraded from being the core focus of the university and replaced by administrative and managerial functions (Slaughter and Rhoades 2009; Smyth 2017). Neoliberalism, as Brown (2015) aptly puts it, has a strong influence of "economising" HE and has become "a governing rationality that disseminates market values and metrics to every sphere of life and construes the human itself exclusively as *homo economicus*" (176). Although less visible through measurable indicators in MEBHE, neoliberalism alongside managerialism and NPM have subtly yet forcefully reinforced governance and policymaking in the Malaysian HE system under the pretext of defining excellence.

The Diverging Tales of Two Universities' Quests for Excellence

Examining the quest for excellence at the system level is only half the story. We now examine two case studies of public universities and their quests for excellence at the institutional level.

Case Study 1: APEX at Universiti Sains Malaysia

APEX is a CAP of PSPTN. The idea behind this program is to support one or two Malaysian universities toward world-class status and becoming a national center of academic distinction:

> Apex universities will be given the latitude to put in place the necessary ingredients to achieve world-class status. The universities' Board of Directors comprising high-calibre professionals will have full authority over the governance of the institution. The board will implement a stringent selection process to select the best individuals available to serve as the Vice-Chancellor and other leadership roles at the university. The Apex Universities will also select students based on academic merit and other holistic criteria that will

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> require personal interviews. However, the composition of the student body must represent the ethnic diversity of the country without compromising the admission criteria. The faculty will consist of outstanding individuals known for their scholarship and commitment to teaching. The Apex Universities will draw their management and academic staff from the top performers in HEIs worldwide, who will be awarded the necessary remuneration to attract them. As a centre of excellence, it will also be equipped with the best facilities and will draw its student body from a rigorous selection process designed to ensure the promotion of academic excellence. Apex Universities will provide the nation better avenues to ensure the retention of the best and brightest students and faculty in our own HEIs. (MoHE 2007a, 34)

In other words, APEX universities are expected to have the best leaders, academics, students, and facilities. Subsequently, HE institutions were invited to submit proposals on the ways in which they could be accelerated toward excellence and be supported to become world-class. APEX status was then awarded to each selected university from a short list of four public and two private universities, based on its transformation plan after evaluation by an independent panel of assessors made up of local and foreign experts (Ismail 2008).

Universiti Sains Malaysia was the only institution awarded APEX status in 2008, based on its proposal, "Transforming Higher Education for a Sustainable Tomorrow." The aim for Universiti Sains Malaysia is to be world-renowned for sustainability and become a sustainability-led university through integrating sustainable development into the education of future generations, bringing together the talent and elements for sustainability, acting as a source of expertise through research and consultancy in promoting sustainability, and adopting best practices on sustainability, especially through its on-campus management and development (USM 2008). Importantly, the proposal also clearly pointed out the need for the university to strategize ways to be more autonomous, accountable, and able to provide incentives for partnerships between the university and businesses, labor market, and the community, while enhancing interdisciplinary and transdisciplinary learning, knowledge accumulation, and facilitating the interaction of knowledge and society.

In summary, Universiti Sains Malaysia proposed to transform itself into an APEX university renowned for its sustainability. It is important to recognize that this proposal on sustainability was well ahead of its time, before the Sustainable Development Goals were even conceptualized by the United Nations. The focus on sustainability was partly a result of a future scenario-planning exercise undertaken by the management of the university in 2005 (USM 2005) and the creation of the first Regional Centre of Expertise on

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Education for Sustainable Development in Southeast Asia accorded by the United Nations University in 2005. As such, the groundwork and idea encapsulated in "Transforming Higher Education for a Sustainable Tomorrow" had started before APEX.

Upon receiving APEX status, Universiti Sains Malaysia began its transformation plan, guided by the Blue Ocean Strategy (Kim and Mauborgne 2005). The transformation plan was developed by analyzing nine aspects of the university and identifying components within each of the aspects that should be eliminated or reduced, raised or intensified, or created in order for the university to strategize and position itself toward excellence as a sustainability-led university. The nine aspects are general, nurturing and learning, supportive governance, research and innovation, resources, student and alumni services, postgraduate studies, concentration of talent, and services and external activities. For example, in the nurturing and learning aspect, the plan was to reduce/eliminate examinations, lectures, rote learning, and apathy, and instead to increase student-centered curricula, market relevance, alternative assessments, technology-enhanced learning, skills/competencies, and the link between research and learning and sustainability development curricula, and to create nontraditional entry pathways for students, Open Course Ware and Enhanced Open Learning (see USM 2008, 56–58).

Although APEX was intended for the institution to become world-class, the measure of being world-class or world-renowned was left to the institution. Therefore, Universiti Sains Malaysia defined excellence and being world-class as becoming a sustainability-led university that would address the issues and needs of society, particularly those at the bottom of the pyramid, or more commonly known as "the bottom billion," to create a more sustainable future. Three ingredients to symbolize the attainment of world-class status were proposed: the concentration of talent, the abundance of resources, and the acculturation of supportive governance. These were similar to the three pillars proposed by Salmi (2009). However, no specific indicators or measures were mentioned, nor any reference to global university rankings, for defining world-class or excellence.

In conclusion, the APEX transformation plan was developed with the spirit of daring to be different. There was an explicit recognition:

> Universiti Sains Malaysia realizes that it is almost impossible to play a catch-up game with established universities and break into the stranglehold of their dominance in the world league table. Judging by their talent pool, abundance of resources and supportive governance, Universiti Sains Malaysia believes that we simply cannot play the same game in order to be excellent. (USM 2008, 64)

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Subsequently, Universiti Sains Malaysia under APEX focused on "World's First Initiatives" research relating to the theme of sustainability. These initiatives include developing the rubber and jute genome, the human genome for Achondroplasia, halal collagen and meningococcal vaccine, and mobile teleradiology, as well as the examining of ancient architecture. APEX admission (a direct-entry program for undergraduate programs, instead of through the centralized mechanism at Ministry of Higher Education), a master's in sustainable development practice, an offshore medical program in India, and the introduction of Sustainability Assessment Methodology were among the teaching and learning initiatives under APEX. The Ombudsman office was established, the reintroduction of the election of Senate members, the creation of a Student Parliament, and the setting up of the USM Foundation were among the new initiatives on the administrative and student fronts (USM 2019).

In total, Universiti Sains Malaysia received 404.5 million MYR (258 million USD) for APEX between 2009 and 2015 (USM 2019). However, there was an open dispute published in a national newspaper in 2014 which, according to a report by the ministry, the university was said to have failed to achieve the APEX KPIs (which were not in the APEX proposal). In rebuttal, the vice chancellor argued that the university had received less than half of the grant requested (*The Star* 2014). Although APEX was part of PSPTN, there was no fixed amount of grants to run the program. The allocation was based on requests and proposals, and since 2016, Universiti Sains Malaysia did not receive funding for APEX. Currently, while Universiti Sains Malaysia uses "APEX" as part of its emblem and the constitution of the university is officially known as the APEX Constitution 2012, the official status of APEX remains unclear. Presumably, the program is ongoing, as there has been no announcement of the completion of APEX, nor has there been a declaration that Universiti Sains Malaysia had the status of being an APEX university.

Case Study 2: High Impact Research at Universiti Malaya

The origin of the HIR program at Universiti Malaya is very different from that of APEX. While APEX was an initiative introduced under the national strategy plan, HIR was a bottom-up proposal from the oldest university to the government. In response to the national aspiration of having Malaysian universities ranked favorably, Universiti Malaya's HIR program was couched precisely so this university could compete in the global rankings. Concomitantly, this proposal can also be seen as a response from Universiti Malaya after its unsuccessful attempt to bid for APEX status.

HIR began with internal funding of 10 million MYR (7.0 million USD) to boost fundamental research at Universiti Malaya. The Ministry of Higher

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Education, with the approval of the cabinet, injected the unprecedented amount of 590 million MYR (402.5 million USD) into HIR for Universiti Malaya to break into the top 100 of the QS World University Rankings by 2015. The huge financial injection from the government was promptly followed by the university in establishing the Universiti Malaya HIR Advisory Council, building networks with eminent academics globally, repurposing buildings to accommodate new laboratories with state-of-the-art facilities, and importantly, awarding generous research grants with specific deliverables in the form of publications in tier 1 journals with the Institute for Scientific Information (ISI)/Web of Science (WOS) indexation (UM 2011).

The vision of HIR was "to conduct world-class research in niche areas and elevate the international reputation and world university ranking of the university," with a mission "to promote multidisciplinary research and research collaboration with local and overseas universities which can result in publications in high impact journals," was only made official three years after the implementation of HIR (UM 2013, iv). The program has seven objectives:

1. Target publications in top Tier 1 ISI/WOS journals including Nature and Science;
2. Set up a Central Core Facility with cutting edge equipment for use by Universiti Malaya and other local universities;
3. Establish international links with Ivy League universities and conduct collaborative research with academic icons, including Nobel Laureates;
4. Forge links with successful Malaysian scientists overseas;
5. Identify new and advancing research fronts and implement new technologies into research;
6. Attract top postgraduate students to do research and help meet national needs; and
7. Work with industry partners to train young scientists in enhanced research skills.

More specifically, a target of 3,400 journal publications in tier 1 ISI/WOS journals by the end of 2015 was determined (UM 2013), and research grants were dispensed with a formula of 100,000 MYR (68,212 USD) for each tier 1 publication. The formula associating the grant amount to the number of publications was made known in the HIR report and made applicable to all disciplines in the university. In other words, there were clear targets, deliverables, and KPIs for recipients of HIR grants.

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Structurally, a centralized HIR Committee was set up and chaired by the vice chancellor with two deputy vice chancellors and three senior professors, alongside administrators coordinating the finance, human resource (HR), and administrative arrangements. The main function of this committee, apart from being the secretariat, was to act as a task force to overcome bureaucratic issues and delays within the existing structure of the university. Five faculty-level HIR committees were also set up in the faculties of Medicine, Engineering, Science, Dentistry, and Computer Science and Information Technology.

Specifically, projects that were identified as high impact were placed directly under the HIR secretariat. Because time was essential, every aspect of these projects was expedited to ensure no delay in research progress due to bureaucracy. For instance, procurement was done directly, without having to go through the department and faculty, while the appointments of research assistants, postdoctoral fellows, and postgraduate students were done directly through the HIR secretariat. In other words, HIR became a separate research system to cater to 30 percent of research activities in the university, and it operated in parallel to other research programs funded internally by the university or externally through the common research grants of the Ministry of Higher Education. Most important, all HIR projects were audited at least twice a year to monitor their progress, and penalties for not achieving the targets despite all the privileged support were also clearly stated, including the withholding of salary, promotion, and future grants.

Under HIR, the Universiti Malaya HIR Advisory Council was established to advise the university in matters related to research priorities and facilitate joint research between their institutions and Universiti Malaya. The Advisory Council was comprised of four Nobel laureates and two distinguished fellows, mainly from medicine/physiology, biology, and chemistry.

By 2016—at the end of the five-year HIR program—Universiti Malaya announced the targets that had been met. In terms of journal publication, there were 3,623 in tier 1, 474 in tier 2, 294 in tier 3, 146 in tier 4, and 199 in non-ISI journals. Out of the 590 million MYR (402.5 million USD), 548 million MYR (373.8 million USD) was spent over the five years, which included 354 million MYR (241.5 million USD) as operating expenditures and 194 million MYR (132.3 million USD) as capital expenditures. A total of 198 academic icons were engaged, and 297 intellectual property rights were filed and granted. Through HIR, 3,065 persons were employed, including research assistants and postdoctoral fellows. Importantly, high-end and state-of-the-art equipment, some of which was unique in Southeast Asia, were purchased and enabled research in the areas of genomics, proteomics, metabolomics, analytical chemistry, and

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cancer, as well as clinical research conducted at Universiti Malaya (USM 2016). The equipment procured through HIR was not put in the faculty or department, but instead in a dedicated HIR building that was repurposed to house it directly under the purview of the vice chancellor through the HIR secretariat. Such an arrangement further underlined the intention to change the existing territorial attitude and bureaucratic nature of procurement and asset management within the university.

In terms of the university rankings, Universiti Malaya was ranked 146th in the 2016 QS World University Rankings, 133rd in 2017, and 114th in 2018. The university managed to break into the top 100 again only in 2019, attaining 87th position, after being wrongly ranked at 89th in the inaugural version of the 2004 THE-QS World University Rankings.

However, although the targets were met in 2016, apart from breaking into the top 100 in university rankings, the application to the Ministry of Higher Education for another five-year cycle of HIR was turned down. The main reason for the discontinuation of the program in the mid-2010s was a major economic downturn in Malaysia, which resulted in a drastic reduction of allocation to HE. The Malaysian ringit depreciated by 26 percent against the US dollar between 2014 and 2015 (Astro Awani 2015), and there was a drop in oil prices, which negatively affected the Malaysian economy. Subsequently, government funding to public universities was reduced by 15 percent in 2016 and 19 percent in 2017 (Malay Mail 2016). Under such difficult economic circumstances, HIR came to an official end in 2016.

A Culture of Excellence

Without a doubt, the initiatives that were introduced at the system and institution levels to propel HE toward excellence affected and changed the culture within HE. At the system level, when PSPTN was reviewed at the halfway mark, three key findings and observations on the impact of the strategic initiative were highlighted (Harun et al. 2014).

First, the culture of quantification focused on such aspects as the expansion of access and enrollment with initiatives and programs and projects introduced to achieve the numerical targets. However, the prevalence of such a culture masked more important issues on access, such as the choices and diversity of the developmental pathways for students within HE. The review of PSPTN also highlighted the lack of attention to issues about student learning experiences, the academic credibility of programs, and more nuanced issues related to curricula and pedagogy, which were essential alongside the quantitative expansion.

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Second, the obsession with numbers can be seen in the articulation of internationalization within the national initiatives. As pointed out in the review report, "internationalization should mean more than just about 'getting the numbers' and focus too should be placed on the quality of students, and internationalizing the curriculum" (Harun et al. 2014, 99). Almost a decade later, the pandemic that brought student mobility to a standstill exposed the narrow conceptualization of internationalization that remained at "getting the numbers" of international students into Malaysia (Doria and Chung-Fernandez 2021).

Third, PSPTN successfully promoted and intensified the research culture in Malaysian HE; between 2007 and 2013, there was a 310 percent increase in publications and 460 percent increase in the cumulative impact factors of researchers and academics in Malaysian HE institutions (Harun et al. 2014). Research also became the most important component in the KPIs of institutions, whereby a dedicated monitoring mechanism, MyRA was used by the Ministry of Higher Education to evaluate the quality of research through measurable indicators. However, as highlighted in the review of PSPTN, research remained "government-led," academic-centric, and almost fully dependent on government grants. There was limited involvement from industry. In addition, the dominance of the research culture relegated teaching and services to secondary functions of universities, and these secondary functions were also given far less emphasis on the appraisal and promotion of academics in universities (Azman and Mydin Kutty 2016; Azman et al. 2016).

At the institutional level for the two case studies in this chapter, these major initiatives expectedly changed the culture and ecosystem of the institution. Given the similarity of the HIR to PSPTN, where both are research-centric and geared toward excellence, as measured narrowly by publications used in the construction of global university rankings, the impact on Universiti Malaya is expected to be massive, given that HIR received an unprecedented amount of funding.

However, this unprecedented allocation has been likened to a steroid that artificially boosted the research performance of the university, and consequently distorted the research direction and perceived impact of research:

> HIR needs to, first, identify the [research] direction. HIR is for Universiti Malaya to squeeze into the top 100 in the rankings, but the duration is very short, and it does not quite make sense to immediately raise the rankings. This is just like you deciding today you want to participate in the Olympics. It is not like we are planning and preparing for two Olympics [8 years] ahead. [. . .] HIR needs to, first, identify the direction. You cannot say today we want

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> to publish in Nature or Science. Impossible. It would not work. That was the problem with Universiti Malaya [during HIR]. Researchers have been pushed with the money. "Take, take the money. Take this 1 million and do whatever you want." For every 100,000 you spend, just give me one ISI paper. Does not make sense. There is no real direction for research. (Anonymous academic,[2] Universiti Malaya, personal communication, October 6, 2020)

Furthermore, on the impact of HIR and research, this academic illustrated using her area of research, computer science, as an example to illustrate the different viewpoints:

> So, if you really want to look at the impact on computer science, you can do a lot. For example, there are many research projects with the medical school. They want to be able to have a platform to connect patients and hospitals for data processing. This is where the computer science people should come in. They need a different data model, a different data management platform. Data science is the enabler and must be applied in a domain [for it] to make sense. Unless we are like MIT or Stanford doing fundamental research, like at the hardware level to improve RAM efficiency or [developing] new learning algorithms, if we have the kind of resources and skillsets, yes then we can do that kind of research. But in Malaysia, we should do more applied research from a computer science perspective. [. . .] Another example [is] using drones to capture images of paddy fields and analyze which part of the field had been affected by bacteria. We should do more applied science research because we can help the community. At the same time, you can solve some fundamental issues. From my involvement in these applied research projects, I realized the back-end data integration platform is really a mess. Now I can approach fundamental computer science research. [. . .] Instead, [during HIR], I am hiding in my cubicle and coming out with imaginary problems, getting some data from a certain field, then publishing in the field without any of the core authors from that field. It does not make sense at all because we can publish an article about mental health, but all the authors are from computer science. You know it is very wrong. [Second], do not compromise on having an immediate impact. We need to tell whoever funding this, do not to expect something great by next year. It would not [happen. Great] things take time. If we want our athletes to win Olympics this year, yes [we] can inject steroids, then they can swim or run very fast. Unfortunately, HIR is like a steroid. (Anonymous academic, Universiti Malaya, personal communication, October 6, 2020)

This view, although from an academic, aptly underlines the nature of HIR for Universiti Malaya to achieve an almost instantaneous result in the global

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rankings. While we cannot ascertain the extent to which the academic community in the university as a whole shared the view of this person, it nonetheless highlighted fundamental considerations about the concepts of quality, excellence, and the impact of research and the culture in which this specific version of these concepts has become dominant (Wan 2021).

Moving on to APEX in Universiti Sains Malaysia, an impact study was commissioned in 2018 to assess the program after a decade. While the report descriptively outlined many of the results that the university has achieved from the program and the associated grants, the impact and influence of the program on the culture of excellence in the university remained vague.

A key point that should be considered in trying to understand the culture of excellence in Universiti Sains Malaysia is that, to date, APEX has experienced three changes of leadership, each of which lasted between three and five years.

Equally important to consider, partly due to the more arbitrary objective and targets of the program, and the collective, whole-institution approach taken to develop APEX, is how the articulation and focus on this quest for excellence changed. Reading through the various documents about APEX across the decade (USM 2008, 2013, 2016, 2019), the narrative, focus, and direction shifted. Its reinterpretation, as well as the specific projects along the way, may have reinforced some parts of APEX, but they also changed and diluted some other parts.

Yet, the most significant change that can be observed in Universiti Sains Malaysia is the attitude toward global university rankings. While APEX explicitly distances itself from these metrics and league tables (USM 2008), Universiti Sains Malaysia in the past five years has been actively positioning itself in these rankings, most notably taking great pride as the highest-ranked Malaysian university in the THE Impact Rankings.

Discussion

In determining excellence, Salmi (2009) proposes three essential components: a concentration of talent, an abundance of resources, and supportive governance. Although the concept of excellence at the system and policy levels has shifted from a ranking-centric measure in PSPTN to a more subtle version in MEBHE, what remains is a dominant ideology of neoliberalism and NPM across these strategic documents. Excellence, therefore, has remained largely focused on KPIs, quantification, and measurables as a way to be seen as more accountable.

At the system level, PSPTN attempted to address all three essential components. but with an obsession with using global university rankings, which

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prioritize research activity as the sole indicator of excellence. Increasing the concentration of researchers through initiatives to fund postgraduates, providing generous grants, and establishing dedicated entities in the form of Project Management Offices at the system and institutional levels ensured that the pursuit of excellence was in order. Yet, while there was an additional governance structure in place to ensure the implementation of PSPTN, such as MyRA, supportive governance across the HE system that facilitated effective leadership across institutions remained unaddressed (Morshidi, Abdul Razak, and Azman 2012). For instance, the governance of HE in Malaysia has been highly centralized, with strong government involvement that dictated the development of institutions, to the extent of directly appointing institutional leaders. Hence, PSPTN, despite the strong influence of neoliberalism and New Public Management (NPM), has not transformed the centralized and bureaucratic nature of HE in Malaysia. Institutional autonomy remains limited.

Moving to MEBHE, the abundance of resources was greatly reduced due to the economic downturn in the mid-2010s, which led to serious austerity in public universities. The reduction in resources to a large extent limited investment in developing talent and building capacity. Many international staff, who were employed on a contract basis, had to leave their positions at public universities (Wan and Morshidi 2018).

Supportive governance across the HE system and institutions remained similar, with no change to the structure and authority in this respect; the system remains centralized and bureaucratic, with the ministry remaining in tight control of the HE system (MoE 2015). Furthermore, the change of the mode of implementation in MEBHE, where there was a reduction in the use of measurables and a concurrent strengthening of the corporate and managerial grip on HE, has intensified. The fact that market and economic ideology continues to dominate MEBHE dictates the definition of excellence.

The same framework of three essential components, when used to explore and compare the two excellence initiatives at the institutional level, illustrates commonalities as well as differences. In terms of similarities, both initiatives heavily relied on the availability of resources. HIR was almost immediately stopped when the funding came to an end after five years because the chase for research excellence in such a program requires significant funding: the procurement and maintenance of high-level equipment, the purchase of consumables, and the hiring of talent all cost money. Similar to APEX, the reduction of funding had serious implications for the quest for excellence.

The overall governance structure for both universities involved in APEX and HIR were similar, as they are public universities governed under the Universities and University Colleges Act of 1971 (Act 30). The overarching governance

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structure and authority of the university are directly under the minister of higher education, including the degree of autonomy, the status as a statutory body, and policies concerning HR and financial and academic accreditation. However, although having the same constitutional template for a public university, as provided by Act 30, Universiti Sains Malaysia included additional items in its APEX Constitution, such as the Ombudsman Office and the Student Parliament.

There are also significant differences between APEX and HIR. First, HIR has a clear, focused, and measurable target for defining excellence. Although the definition of excellence was narrowed to a position in the global university rankings and the number of journal papers in tier 1 ISI/WOS, APEX did not have measurable targets. It was driven by a conceptual articulation of what aspects of the university need to be reduced, eliminated, increased, or created, which would lead to the achievement of excellence. Crucially, the definition of excellence in APEX was developed within the institution, not dictated externally. It is also commendable that the niche area that was proposed by APEX was well ahead of its time; the emphasis on sustainability was already a central theme of the discussion within the institution a decade before the global community began the Sustainable Development Goals.

Second, due to the differences in the definition of excellence and the extent to which excellence is articulated across these two programs, the implementation and management of these programs were different. While HIR experienced a change of leadership halfway through the five-year program, the governing system remained intact, and therefore the change of leadership did not pose a serious issue. The influence of leadership also had a massive impact, especially the way in which HIR was proposed. Under the leadership of the vice chancellor, who was appointed from a private university instead from within Universiti Malaya, the formulation of HIR was an unconventional approach, where the university proactively went to the Ministry of Higher Education to initiate the program.

Contrastingly, although APEX also experienced changes of leadership, coupled with a program that did not have specific and measurable outcomes and targets, the reinterpretations under different leaders seem to have shifted the direction and goal posts of the program. Over the years, there were four vice chancellors who led Universiti Sains Malaysia during the program. When APEX was first awarded, the vice chancellor was in his eighth year in office, and after three years of the program, he passed the baton to one of the deputies. Yet many of the initiatives and funding under APEX were discontinued during this second tenure. The third vice chancellor had also been another deputy vice chancellor during the initial phase of the program before leaving to lead

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another public university, and eventually he became the director-general of higher education. By the time the third vice chancellor assumed office, the "dare to be different" ethos of APEX had been severely diluted, and MEBHE 2015–2025, which may not have been compatible to the principles, ethos, and conceptualization of the program, became the guiding strategic document for the university. Most interestingly, the current vice chancellor of Universiti Sains Malaysia was a deputy vice chancellor of Universiti Malaya throughout HIR.

The venture into and the celebration of university rankings, including the emphasis on the activities geared toward this form of global competition, as opposed to an indigenous focus on transforming Malaysian HE for a sustainable tomorrow, illustrated the 180-degree change of direction that was a result of the leadership changes at Universiti Sains Malaysia, the dilution of the "dare to be different" spirit, and the varying personalities and backgrounds of the four vice chancellors.

Third, HIR was almost exclusively focused on research in the quest for excellence proxied by university rankings. Due to this narrow concept of excellence, the focus was almost exclusively centered on subjects like medicine, engineering, and the hard sciences. Consequently, research performance and management in the university used these subjects as benchmarks at the expense of research in the arts and social sciences. In five years, only 12 percent of HIR projects, 2.3 percent of operational expenditures, and 0.14 percent of capital expenditures were spent on the social sciences (UM 2016). However, as APEX took a whole-institution approach and did not confine itself to an existing framework of excellence, the emphasis and initiatives introduced at Universiti Sains Malaysia were more balanced, transdisciplinary, and interdisciplinary.

Conclusion

PSPTN was a strategic plan at the system level, designed to chart the quest for excellence in Malaysian HE. This quest for excellence was successful in mobilizing high levels of public resources and generating attention to and a focus on the HE system, which led to an increase in access, the expansion of HE, and a proliferation of research activities and publications. Driven by the collective influence of neoliberalism, managerialism, and NPM, the definition of excellence was translated into simplistic indicators and position in the global university rankings to demonstrate impact, quality, and performance.

The mainstream definition of excellence that began with PSPTN continued with MEBHE. Although MEBHE saw a reduction in the use of KPIs, the current national strategic plan for the Malaysian HE system remains heavily influenced by the collective influence and ideologies of neoliberalism, managerialism, and

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NPM. Apart from the significant reduction of public funding in HE under MEBHE, the governance and the definition of excellence at the system level remained relatively unchanged.

HIR and APEX were quests for excellence embarked upon by Universiti Malaya and Universiti Sains Malaysia, respectively. While both programs demonstrated the importance of funding to sustain these excellence initiatives and brought about a change of culture and practices within their institutions, they underlined contrasting definitions of "excellence" and ways to implement, monitor, and assess it.

HIR, on the one hand, adopted an idea of "excellence" similar to PSPTN, through narrowly defined indicators of publications in specific journals to game the rankings game. APEX demonstrated a different kind of confidence that Universiti Sains Malaysia had in adopting a "dare to be different" definition of excellence and its proposed implementation. But, due to the changes of leadership and the absence of clear and tangible targets in APEX, there were major challenges and difficulties for Universiti Sains Malaysia in providing a counternarrative of excellence.

Nonetheless, what is perhaps most important as we look to the future of excellence in Malaysian HE is the groundedness of this definition in the fundamental role and purpose of a university. Borrowing key ideas from Collini (2012), we define a university as an institution that must be rooted in society in order to preserve, understand, advance, and disseminate intellectual scientific and artistic knowledge across generations. Deviating from this role and purpose will defeat the very reason for universities to exist in our society, and call into question their direct or indirect public funding. Only when this excellence truly benefits the society of Malaysia and humankind, rather than chasing the glamour and prestige of global competition, will the quest for excellence in Malaysian HE be meaningful and complete.

Notes

1. The classification of technical universities had not yet been introduced at that time, and these universities were classified as focused universities.

2. This academic from Universiti Malaya was interviewed on October 6, 2020, for a research project about the adjustment and adaptation of foreign-trained researchers when they returned to Malaysia. HIR was a major part of the interview, and the excerpts were reproduced with permission.

References

Astro Awani. 2015. "Pressure on Ringgit, Bursa Malaysia Continues amidst Global Slowdown." *Astro Awani*. October 23, 2015. https://www.astroawani.com/berita-bisnes/pressure-ringgit-bursa-malaysia-continues-amidst-global-slowdown-77635.

Downloaded from http://direct.mit.edu/books/book-pdf/2218384/book_9780262376693.pdf by guest on 18 November 2024

Azman, Norzaini, and Faridah Mydin Kutty. 2016. "Imposing Global University Rankings on Local Academic Culture Insights from the National University of Malaysia." In *The Global University Rankings Game: Changing Institutional Policy, Practice, and Academic Life*, edited by Maria Yudkevich, Philip Altbach, and Laura Rumbley, 97–123. New York: Routledge.

Azman, Norzaini, Ibrahim Che Omar, Aida Suraya Md Yunus, and Ahmad Nurulazam Md Zain. 2016. "Academic Promotion in Malaysian Public Universities: A Critical Look at Issues and Challenges." *Oxford Review of Education* 42 (1): 71–88.

Brown, Wendy. 2015. *Undoing the Demos: Neoliberalism's Stealth Revolution*. New York: Zone Books.

Collini, Stefan. 2012. *What Are Universities For?* London: Penguin Books.

Doria, Abdullah, and Rozilini Mary Chung-Fernandez. 2021. "Malaysia's Education Hub in Peril." *Astro Awani*, July 7, 2021. https://www.astroawani.com/berita-malaysia/malaysias-education-hub-peril-307095.

Harun, Mohamad Kamal, Musa Ahmad, Norhidayah Azman, Mohd Rushdan Mohd Jailani, Ismie Roha Mohamed Jais, Amalina Ahmad Tajudin, et al. 2014. *HE Leads Malaysia's Future: Review of the National HE Strategic Plan*. Putrajaya, Malaysia: Ministry of Education Malaysia.

Ismail, Mohamad Zawawi. 2008. "Establishing APEX University: "Business as Unusual." *Bulletin of HE Research* 12: 1–2.

Khoo, Kay Kim. 2005. *100 Years the University of Malaya*. Kuala Lumpur: University of Malaya Press.

Kim, W. Chan, and Renee Mauborgne. 2005. *Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant*. Cambridge, MA: Harvard Business School Press.

Malay Mail. 2016. "Budget 2017: Public Universities Suffer almost 20pc Spending Cut." *Malay Mail*, October 22, 2016. http://www.themalaymailonline.com/malaysia/article/budget-2017-public-universities-suffer-almost-20pc-spending-cut.

Ministry of Education (MoE). 2015. *Malaysia Education Blueprint 2015–2025 (HE)*. Putrajaya, Malaysia: Ministry of Education Malaysia.

Ministry of HE (MoHE). 2006. *Report by the Committee to Study, Review and Make Recommendations Concerning the Development and Direction of HE in Malaysia: Towards Excellence*. Shah Alam, Malaysia: University Publication Centre (UPENA).

Ministry of HE (MoHE). 2007a. *National HE Action Plan 2007–2010*. Putrajaya, Malaysia: Ministry of HE Malaysia.

Ministry of HE (MoHE). 2007b. *National HE Strategic Plan Beyond 2020*. Putrajaya, Malaysia: Ministry of HE Malaysia.

Ministry of HE (MoHE). 2020. *HE Statistics 2019*. Putrajaya, Malaysia: Ministry of HE Malaysia.

Morshidi, Sirat, Ahmad Abdul Razak, and Norzaini Azman. 2012. "University Leadership in Crisis: The Need for Effective Leadership Positioning in Malaysia." *HE Policy* 25: 511–529.

Salmi, Jamil. 2009. *The Challenge of Establishing World Class Universities*. Washington, DC: World Bank.

Slaughter, Sheila, and Gary Rhoades. 2009. *Academic Capitalism and the New Economy: Markets, State, and HE*. Baltimore: Johns Hopkins University Press.

Smyth, John. 2017. *The Toxic University: Zombie Leadership, Academic Rock Stars and Neoliberal Ideology*. London: Palgrave Macmillan.

The Star. 2014. "We Were Only Given RM314mil, So Target out of Reach." *The Star*, December 15, 2014. https://www.thestar.com.my/news/nation/2014/12/15/we-were-only-given-rm314mil-so-target-out-of-reach/.

Universiti Malaya (UM). 2011. *Higher Impact Research Grant: Annual Report 2011*. Kuala Lumpur: Universiti Malaya.

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Universiti Malaya (UM). 2013. *Higher Impact Research Grant: Annual Report 2013*. Kuala Lumpur: Universiti Malaya.

Universiti Malaya (UM). 2016. *University of Malaya High Impact Research: Final Report*. Kuala Lumpur: Universiti Malaya.

Universiti Sains Malaysia (USM). 2005. *Constructing Future HE Scenarios: Insights from Universiti Sains Malaysia Celebrating 50 Years of Nationhood*. Penang: Universiti Sains Malaysia.

Universiti Sains Malaysia (USM). 2008. *Transforming HE for a Sustainable Tomorrow*. Penang: Universiti Sains Malaysia.

Universiti Sains Malaysia (USM). 2013. *The APEX University: The State of the Art*. Penang: Universiti Sains Malaysia.

Universiti Sains Malaysia (USM). 2016. *USM APEX 2020*. Penang: Universiti Sains Malaysia.

Universiti Sains Malaysia (USM). 2019. *APEX USM Impact Research Report: One Decade after Recognition 2008–2017*. Penang: Universiti Sains Malaysia.

Wan, Chang Da, and Sirat Morshidi. 2018. "International Academics in Malaysian Public Universities: Recruitment, Integration and Retention." *Asia Pacific Education Review* 19 (2): 241–252.

Wan, Chang Da, Sirat Morshidi, and Dzulkifli Abdul Razak. 2020. "Academic Governance and Leadership in Malaysia: Examining the National HE Strategic Initiatives." *Journal of International and Comparative Education* 9 (2): 91–102.

Wan, Chang Da. 2021. "Quality, Excellence and Impact: Can We Really Measure Them?" *IPPTN Issues Paper* 5.

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5

Academic Excellence Initiatives in the Republic of Korea: Brain Korea 21

Byung Shik Rhee and Meishan Yin

Introduction

In the late 1990s, the Korea Ministry of Education (MOE) started Brain Korea 21 (BK 21), one of the first large-scale human resource (HR) development programs to address the low standing of Korean universities in research performance and global rankings. BK 21 has continued without interruption and is now in its fourth phase, aiming to nurture world-class research universities and train a high-quality workforce for South Korea. The government had poured 5 trillion KRW (5.8 billion USD) into selected universities by 2020, and participating universities will be given an additional 3 trillion KRW (3.5 billion USD) from the government during the newly launched fourth phase (2020–2027). The government has paid considerable attention to universities selected to the program; it provides successful applicants with financial incentives and confers social prestige as research universities with solid graduate programs. More than two-thirds of eligible universities (113 out of 158 universities in 1999) initially applied, and their interest in the program remains strong.

With such a long time span and the several phases, it is no surprise that BK 21 has affected participating universities and national higher education (HE) in various ways. For example, it helped them to produce a significant number of talented workers, primarily in the science and technology fields and an ever-increasing number of Science Citation Index (SCI) papers, and to improve the quality of graduate education overall. Hence, it prompted schools to become research universities and enhance their international visibility. To the government's disappointment, however, even the top-tier national universities have yet to reach the expected levels in global university rankings. Seoul National University (SNU) ranked only in the top 101–150, and the Korea Advanced Institute of Science and Technology (KAIST) only in the top 201–300 in the Academic Ranking of World Universities in 2019. What happened? What made

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them stumble? In a keynote speech at the 20th Anniversary Symposium of Brain Korea 21 in 2019, SNU's president, Se-Jung Oh, hinted why, saying that "so far, BK21 has not succeeded in leading our universities to world-class as it has just endeavored to raise numbers on quantitative indicators."

This chapter explores what BK 21, particularly its third phase, has achieved thus far by using prior studies, government documents, newspaper articles, and the opinions of key stakeholders. This specific phase is the focus of this discussion because it is the most recent completed one (the fourth phase is still underway), and no comprehensive review of this third phase has yet been carried out. To this end, this chapter first describes what the third phase of BK 21, the BK 21 PLUS (Program for Leading Universities and Students), looked like, and then discuss its likely impact on participating universities and Korean HE as a whole.

A Brief Description of the Korean HE System

Korean HE has dramatically expanded since the end of the Japanese colonial domination in 1945 and is now at the universal access stage (Trow 1999), where seven of ten high school graduates go to college—one of the highest proportions in the world. In 2020, enrollment in HE institutions reached about 3.6 million students in 429 colleges and universities, including around 320,000 graduate students and 90,000 full-time faculty members (MoE and KEDI 2021). Roughly 80 percent of students attend private HE institutions. While HE institutions are legally divided into categories by function, universities and junior colleges are dominant; roughly 50 percent and 40 percent of students are enrolled in them, respectively. Universities serving academic purposes are mostly four-year HE institutions with graduate schools of various kinds, and junior colleges are mainly vocationally oriented, two- or three-year institutions (Ko 2020).

Graduate schools as settings for advanced studies are an essential part of universities, but they are not separate HE entities. Three types of graduate schools belong to a university: general, professional, and specialized. The oldest general graduate schools have existed for academic research and education since 1952. Professional graduate schools were established more recently, aimed at those in career-specific advanced studies of such fields as law, medicine, business, and finance. Only one general graduate school is allowed in each university, but multiple professional schools can be founded. In these two types of graduate schools, master's and doctoral degrees are conferred, whereas specialized graduate schools running only evening classes have no doctoral programs.

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Almost all universities (over 90 percent, 186 out of about 200 universities in 2020) have a general graduate school, which consists of departments with at least five faculty members for a master's degree (seven faculty members for a doctoral degree). They also typically have multiple professional and/or specialized schools. For example, SNU has 1 general graduate school with 72 departments and 12 professional schools, while Korea University (a private, top-tier institution) has 1 general graduate school, with around 100 departments, 8 professional schools, and 13 specialized schools. Nationwide, as of 2020, there were 186 general graduate schools, 188 professional graduate schools, and 795 specialized graduate schools (Korean Educational Statistical Service 2020). Such graduate schools were the primary target of the BK 21 program from its beginning. In particular, because of the program's eligibility restrictions, departments with doctoral programs in only general and professional graduate schools (i.e., departments with at least seven full-time faculty members) can join.

Policy Background for BK 21

The main reason that the BK 21 program started in the first place and continues until now is the government's firm belief that a talented workforce is the key to the national development and competitiveness in the knowledge economy. It was first initiated in 1997, when Korea was heavily hit by the Asian financial crisis. The government's solution to economic recovery was to produce top-quality research output and nurture highly skilled workers in science and technology through building research universities and improving the research performance of universities (Seong et al. 2008).

Policymakers found it valuable to keep moving in pursuit of academic excellence in graduate schools and universities. They believed that as the first and second phases of BK 21 helped participating universities succeeded in significantly increasing their number of SCI papers and their global rankings to some extent, the third phase, with its shifted focus on quality over quantity in research productivity, would contribute toward enhancing their research impact (MOE 2013).

The Korea Development Institute, which officially reviewed the feasibility of the third phase of BK 21, also suggested that it should be continued for practical reasons. The government's share of investment in tertiary education so far has been modest and below the average of Organisation for Economic Co-operation and Development (OECD) countries, and given that both the quality of HR and advanced technology are critical for economic prosperity, the economic return on investment in graduate education and research could be

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Table 5.1
Major achievements and limitations of BK 21 program, listed by phase

BK 21	First Phase	Second Phase	Third Phase
Accomplishments	– Trained graduate students in cutting-edge science and technology – Improved the research productivity of universities (SCI publication global ranking to top 13 from 18)	– Continued to improve research environments for graduate students and young scholars via financial support – Improved international visibility by recruiting international scholars	– Trained next-generation scholars across major fields of study – Continued to improve research capabilities and world rankings of selected universities (5 universities in the top 100, QS World University Rankings)
Limitations	– Weak industry-university cooperation – Insufficient support for basic and interdisciplinary fields – Increasing gap between metropolitan and local universities	– Struggled in improving the quality of research performance (e.g., citations) – One-size-fits-all approach to internationalization (e.g., focused mainly on hosting international scholars)	– Continued concentration of talents to universities in the capital region – Relatively less focus on education than research in graduate programs – Weak research excellence (e.g., global citation rankings around the 30s) – Difficulty creating world-class universities

sufficiently high in the long run. More practically, since large-scale financial support has been provided for several years through BK 21 and World Class University (WCU), its discontinuation may cause real problems in conducting research in science and technology fields in universities (Korea Development Institute 2012, 59–60).

More specifically, the MOE has documented the BK 21 program's major achievements and limitations across the three phases (table 5.1).

While the BK 21 program has been consistent in its goals, design features, and selection principles, it was adjusted to address issues recognized during the previous phase. In the second phase, the government placed more stress on industry-university cooperation, basic and interdisciplinary fields, its link to national research and development (R&D) programs, and efforts to strengthen the research capabilities of regional universities for balanced development. The third phase increased financial support to participating graduate students and young scholars, extended support to emerging fields of creative

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convergence, and emphasized the quality of graduate education and research excellence. Three distinct features—a quality-focused approach, farsighted management, and institutionwide innovation—characterize the fourth phase, which started in 2020. The quality of research performance, designed to meet criteria beyond merely the number of publications, became a major evaluation metric in the selection of departments. The annual assessment for participating departments was abandoned to help them plan for the long term. More drastically, a relatively small amount of extra funding (370 billion KRW, 430 million USD), exclusively for universitywide innovations at the graduate level, was given to nineteen universities with at least five departments (education-research project team, *KyoUk YonGu Dan*) selected.

Fundamentals of the Third Phase of BK 21 PLUS

Since its first adoption in 1999, the BK 21 program has gone through three phases: the first from 1999 to 2005 (total budget of 1.3 trillion KRW/1.5 billion USD), the second from 2006 to 2012 (1.8 trillion KRW/2.1 billion USD), and the third from 2013 to 2020 (1.9 trillion KRW/2.2 billion USD). Encouraged by the accomplishments of the previous phases, the program is now in its fourth phase, which will continue until 2027. The third phase of BK 21, the project officially called Brain Korea 21 PLUS, was merged with WCU, implemented between 2008 and 2012. While the WCU program had a similar goal to BK 21—namely, to build globally competitive research universities—the former focused more on inviting and utilizing prominent foreign scholars from abroad in science, technology, engineering, and mathematics (STEM) areas (Um 2013). The motivation behind this WCU program was to reverse the brain drain and increase the brain gain and/or brain circulation of US doctoral recipients by importing star faculty from abroad, who would help establish a superior study and research environment connected to the international knowledge network (Byun and Kim 2011).

WCU did not last as long as hoped and was subsumed into BK 21 PLUS, where only about 6 percent of the funding of 16 billion KRW/year (18.6 million USD/year) was reserved for the subprogram supporting previously hired international faculty members via the program. The exact reason why WCU was dropped so quickly is unclear, but it can be inferred from some criticisms about the program, such as inefficient use of funding because of overlapping goals with BK 21, difficulty hiring distinguished international scholars, and maintaining its commitment to Korean HE institutions.

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Main Goals of BK 21 PLUS

There are three goals of BK 21 PLUS, which remain consistent with that of previous phases (MOE 2013). First, it aims to secure talented researchers through producing well-trained master's and doctoral graduates and supporting postdoctoral researchers. Through this project, the government sought to produce 15,000 master's and doctoral graduates annually. Second, it seeks to nurture world-class research universities. At the time of its policy formulation in 2012, there were six universities in the top 200 in the Quacquarelli Symonds (QS) rankings, and the target was to have eleven by 2019. Third, it strives to enhance the quality of postgraduate education and the research performance of universities. Specifically, considering that better research performance constitutes publishing more papers in the international journals (preferably SCI) with a higher Impact Factor (an index invented by Clarivate that measures the frequency with which the "average article" in a journal has been cited in a particular year or period), the government thus aspired to put Korea twentieth in the citation rankings by 2019, up from thirtieth in 2011.

Key Design Features

BK 21 PLUS has several distinctive design features. First, it emphasizes science and technology fields at the graduate level (about 85 percent of the budget—1.9 trillion KRW/2.2 billion USD total—is reserved for these areas). These fields include basic sciences (physics, biology, chemistry, mathematics, and earth science), and applied sciences (information technology, mechanical, chemical, material, civil engineering, applied life sciences, medical, dental, and oriental medicine). This is intended in part to improve participating universities' world rankings, which rely heavily on research performance in those fields.

Second, along with participating faculty whose R&D costs are partially subsidized via this program, graduate participants are a major beneficiary because more than half of the allocated budget to a research group is dedicated to students' financial aid. It is nevertheless restricted, in that each participating faculty can hire only one doctoral student and two master's students in their program on a contractual basis.

Third, it is inclusive in scope, in that it invited all eligible universities and academic disciplines to participate. While budgetwise, it leans heavily toward science and technology, the humanities and social science fields are not left out. Finally, it explicitly favors regional universities despite the possible risk of compromising academic excellence to some extent, which is discussed next. The Korean context is similar to the other cases in this book, especially Russia, in that most top-performing universities and job opportunities are concentrated in the capital metropolitan area. For Korea, this increases the gap

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between Seoul and the rest of the country. To lessen the gap, the government reserves 35 percent of its total budget and 45 percent of research group funding solely for selected regional participants. These numbers have increased from those of the first and the second phases of BK 21, which indicates the government's heightened interest in balanced regional development.

Principles and Process of Selection

The program's underlying principles in choosing participants (i.e., departments) include selection and concentration, which are also manifested in its full name: BK 21 PLUS (Program for Leading Universities and Students). Department applicants should compete within their respective discipline, region (national versus local), and program type (*sa-up-dan,* meaning "smaller team"). To be qualified, they—either academic departments or smaller teams—must meet certain conditions. Eligible department candidates should have a doctoral program with at least seven faculty members and enrolled full-time students (for *sa-up-dan*). They should also include more than 70 percent of the faculty members in the department. As the participating department does not have to include all their faculty members, it would increase the odds of being selected when excluding some poor-performing faculty members from the research group. Therefore, faculty members who wish to participate in the research group should have proven research performance, preferably publications in international journals, such as SCI and the Social Sciences Citation Index (SSCI). Qualifications for smaller teams are similar, except that the number of faculty members has to be at least three.

Participating groups, either departments or smaller teams, are selected based on three main criteria—teaching capacity, research performance, and the university-level support system—emphasizing the first two categories, at 43 percent and 42 percent of the total score, respectively. Each category has a set of more specific indicators comprised of qualitative and quantitative measurements. For example, for teaching capacity, applicants are assessed for their educational vision and goals, the quality of the curriculum and academic plans, the number of graduate students and degree completers, graduate employment rates, graduate student research performance measured by the number of SCI papers adjusted by their impact factor, and internationalization, as evidenced by the rates of foreign faculty, international students, English Medium Instruction (EMI), and dissertations written in English.

The second criterion looks at the quality of the research performance of participating faculty as a group. It is critical for a department applicant to have a pool of high-performing faculty in terms of academic papers published in international journals, the number of research grants, the number of

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knowledge transfers, and activities in international conferences and research collaborations.

Last but not least, applicants also are judged by what their university has accomplished and its plans for creating a research university. Specifically, universities should prove that they have a vision and strategies to become a research university and to make an institutional budget available for the reforms necessary to improve graduate education and research. Although this evaluation accounted for only 15 percent of the total score, it often turns out to be big enough to change the fate of applicants. For this reason, universities, especially those higher in the national rankings, exert all their effort to impress outside reviewers with the excellence of their institutional systems to avoid the blame for failure from their applicants. Such institutional achievements and future plans are typically prepared by a task-force team chaired by the university president or provost.

Upon receiving the book-length applications, the National Research Foundation of Korea (NRF) arranges a large-scale multistage evaluation that lasts for several weeks. Applicants who meet eligibility requirements are then evaluated by peer academics in their respective evaluation panel based on what they turned in, a one-time presentation with an in-depth interview, and site visits by NRF staff. Altogether, around 800 faculty members served as reviewers on about 100 evaluation panels. In 2012, a total of 345 *sa-up-dan* and 866 smaller teams in 108 universities applied, and out of them, 195 *sa-up-dan* and 280 smaller teams in 64 universities were selected. About 35 percent of them were national or public. The proportion remained steady across the four phases, ranging between 34 percent and 40 percent.

In this process, the international reviewer's role is not major; only a small portion of applicants (about 20 out of 500 research groups) in interdisciplinary STEM areas are selected through international peer review, which accounts for 20 percent of the total score. Altogether, international reviewers did not play a significant role in the third phase. The only time that it played a set role was in the first selection process in 2013.

BK 21 PLUS Funding

While around seventy universities having at least one project team participated in each phase of BK 21, only forty-six universities have been uninterruptedly funded throughout all the phases. All government funds go to participating departments via universities. Universities have no funds to spend on institutions in this phase. For the third phase of the program, the Korean government invested a total of 1.9 trillion KRW (2.2 billion USD). In terms of allocation by academic discipline, about 85 percent of the funding was allocated to

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participants in science and technology fields, while the other 15 percent went to social sciences and humanities (SSH). By region, two-thirds of the funding went to participants in the Seoul metropolitan area.

Regarding usage, most of the funding is allocated to scholarships for students and young scholars. How to use the remainder is up to the participating departments and teams. Around 10 to 30 percent of the funding can be used for curricular development, internationalization, and research activities, university-industry cooperation, or a combination.

Governance and Monitoring Instruments

At the government level, three monitoring bodies, the General Project Management Committee (a review and consultation body composed of a dozen domestic academics and professionals), the Ministry of Education, and NRF, oversee annual reviews and consulting, midterm evaluations, and final performance evaluations based on key performance indicators (KPIs) that are the same as those from the selection process. Unlike the previous phases, the third phase provided consultation by NRF annually to encourage institutional capacity building. This consultation was either about performance management or administrative and financial management. Formative evaluations were held as well, though biannually, through which 30 percent of the top performers were awarded additional funding while the bottom 30 percent had their funds to be allocated for the next two years taken away.

Two years after the program's initiation, in the middle of 2015, the three monitoring bodies initiated a midterm evaluation similar to the 2013 initial evaluation to remove low-performing participants and give high-performing nonparticipants a chance to join. Out of 550 departments and teams selected in 2013, 277 departments and teams whose performance score was in the top 50 percent remained, whereas those in the bottom 50 percent had to compete with new applicants. Eventually, about 70 percent of the bottom 50 percent group (about 190 research groups) were dropped and replaced by new applicants. In the mid-2019, one year before the end of BK 21 PLUS, a final performance evaluation was held amid developing the fourth phase. Again, with the help of peer academics, but on a much smaller scale, all three entities once more selected the top performers that would receive additional funding incentives (figure 5.1).

The Impact on Participating Universities

Smaller External Funding and Larger Internal Investment

BK 21 PLUS funding for a participating university is proportional to the number of selected research groups. Since this is not predetermined, how much

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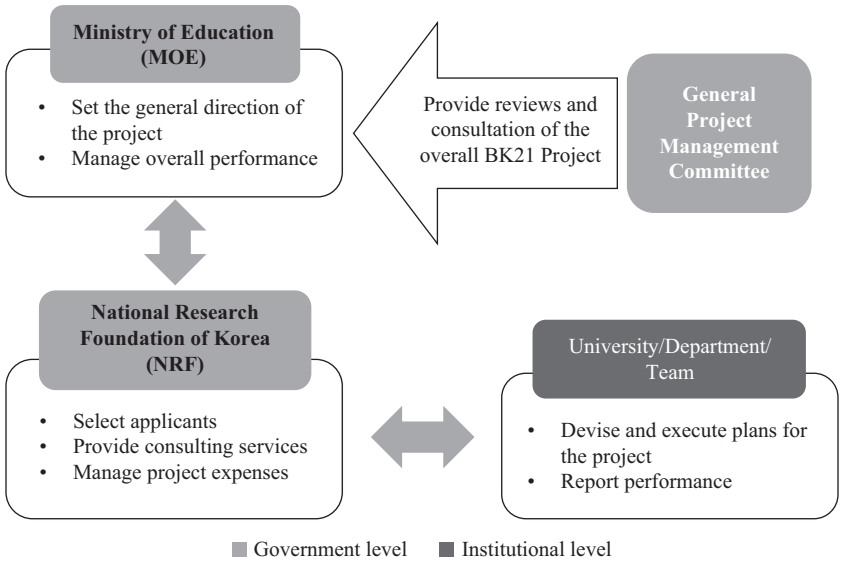
Ministry of Education (MOE)
• Set the general direction of the project
• Manage overall performance
Provide reviews and consultation of the overall BK21 Project
General Project Management Committee
National Research Foundation of Korea (NRF)
• Select applicants
• Provide consulting services
• Manage project expenses
University/Department/ Team
• Devise and execute plans for the project
• Report performance
Government level
Institutional level

Figure 5.1
The governance and monitoring system of BK 21 PLUS.

funding that each will receive can be known only after the race for funding ends. The funding apparently converged on a dozen high-performing universities with competitive graduate programs, as shown in figure 5.2. It was, nevertheless, spread among quite a few universities that had at least one selected research group. Such a "more is better" approach, intentional or not, inevitably led to smaller funding for individual institutions. In fact, Yonsei University received the second-largest amount: about 23.1 billion KRW (26.8 million USD) per year. This comprised only 2.5 percent of the university's annual budget and 6 percent of its 2020 annual research income. The proportions are similar for the other universities.

Even though external funding from the government was modest, its ripple effect was not trivial. Mesmerized by the social status and reputation accompanying world-class research universities, participating universities with financial flexibility invested more than what they received from the government so they could be prepared for the next round of the competition. Yonsei University, for example, was awarded about 169 billion KRW (196.1 million USD) of BK 21 PLUS funding altogether; it has invested twice this amount of financial resources in supporting the program. The added budget (although to be exact, it was a resource reallocation) was spent on financial aid to attract high-achieving students, graduate school fellowships, research incentives for faculty, curricular reform, and internationalization.

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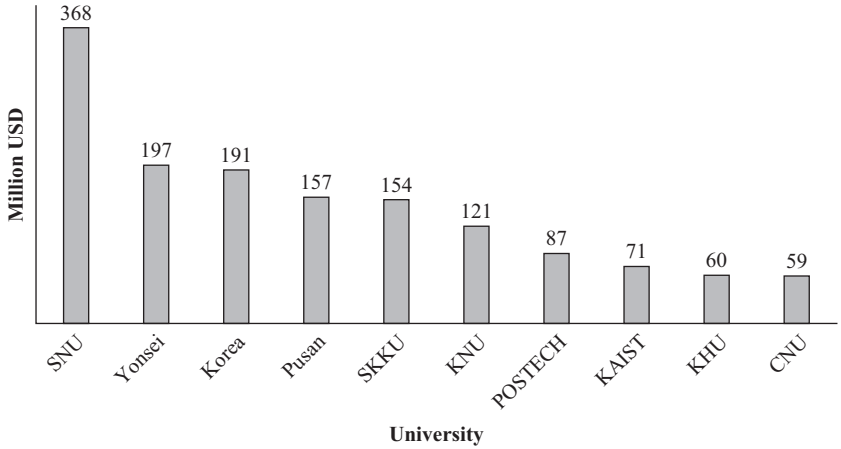

Figure 5.2
Top 10 universities: BK 21 PLUS funding received (2013–2020). The universities, with their locations, are as follows: Seoul National University, Seoul (SNU); Yonsei University, Seoul; Korea University, Seoul; Pusan National University, Pusan; Sungkyunkwan University, Seoul (SKKU); Kyungbuk National University, North Gyeongsang Province (KNU); Pohang University of Science and Technology, North Gyeongsang Province (POSTECH); Korea Advanced Institute for Science and Technology, South Chungcheong Province (KAIST); Kyunghee University, Seoul (KHU); and Chonnam National University, South Jeolla Province (CNU). *Source*: MOE (2013–2020).

Governance—Changing but not Transforming Institutional Authority

Because BK 21 funds were mostly funneled into participating departments and universities served as intermediary management entities, little transformative changes in institutional governance and management were brought about in most cases, except for a dozen universities having a good number of participating departments.

Those universities that had a few tens of participating departments had to manage a large inflow of financial resources and implement the countless new reforms planned for BK 21 PLUS in their institutions. Even though a uniform approach to governance reform rarely existed, a common direction emerged to further strengthen the role of graduate schools, along with expanded presidential leadership to plan and effectively carry out institutionwide reforms in pursuit of becoming a research university. In response to these increased tasks, new administrative units, positions, and coordinating committees were created in participating departments and universities. Yonsei University, a private institution with more flexibility in administrative and governance reforms than national universities, provides an exemplary example. The dean of the graduate school in charge of the general affairs of BK 21 PLUS was promoted to vice president; and a new administrative unit and a headquarters as an ad-hoc coordinating body were created for the graduate school to plan institutional

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reforms and monitor the performance research groups and institutionwide reform tasks. Furthermore, administrative units at the institutional level, such as graduate schools, the office for research and university-industry cooperation, and the office of academic affairs, became more tightly coupled. These changes are likely to continue in the fourth phase of BK 21 since, for the first time, about 13 percent of funding is reserved for innovations in graduate education.

Research Performance—Increasing Quantity but Quality Stagnated

Thanks to BK 21 PLUS, participating faculty and graduate students published more and better papers. According to the MOE (2019), graduate participants published more than twice as many papers as nonparticipants, and their per capita impact factor also increased over time as they published more papers in high-quality international journals. Comparing changes over the first four years (2013–2017) of the program, the per capita impact factor of participating faculty members' publications went up from 16.5 to 21.4, and that of graduate participants increased from 1.4 to 2.3.

However, publishing a paper in a journal with a higher impact factor does not necessarily make it a highly cited paper. So institutions that aspire to become world-class research universities endeavored to find a solution to help their faculty and graduate students publish papers that are cited more often. Regardless of BK 21, some wealthy universities offer a fortune (i.e., tens of thousands USD per paper) to researchers who publish papers in such journals as *Nature*, *Science*, and *Cell*. At some universities, a dedicated parking space is occasionally provided for faculty who are among the global top 1 percent of highly cited researchers, as if inspired by Clark Kerr's (2001) infamously snarky comment about faculty parking. Despite these institutional efforts, such controversial practices were unsuccessful in increasing research impact; as Seoul National University, which received the largest funding of BK 21 PLUS in the nation, noted that "we ranked 60th this year behind Chinese universities, we'd better increase the quality of research papers to be more cited" (Kim 2021).

Talent Development—Selection Effect Versus Program Effect

BK 21 PLUS as an HR development program subsidizes the R&D costs of participating faculty by providing financial aid to graduate participants. Every year, this program has trained an average of 8,800 master's and doctoral students altogether, mainly in the science and technology fields. Participating universities, and selected departments in particular, must be in a better position to secure the human and financial resources necessary to improve graduate education. Attracted by reduced costs for an advanced degree and the academic

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reputation of the graduate program, prospective students will prefer them over nonparticipating departments.

With BK 21 PLUS funding and additional support of various kinds from their institutions, such as a 10 percent matching fund, participating departments could make their educational and research environments more favorable for their graduate students. Graduate students in those departments thus have had more opportunities to enhance their research capabilities via a variety of curricular and extracurricular programs designed explicitly for them. The concentration of talent and the improvement in the quality of education then led to success in research performance and the labor market. These students published more and could find more and better jobs in academia and industry after graduation.

While such academic and career achievements sound impressive, some argue that this reflects not the program effect, but a selection effect (Kim et al. 2019). They reason that greater success happens because graduate participants are already better performers. That is, faculty members do not randomly choose them; rather, they do so according to proven performance or high potential. Regardless of what causes their success, a side effect of this widespread practice of selection becomes apparent. The mounting inequality of "the poor getting poorer and the rich getting richer" between the chosen and not chosen is unavoidable. Those students who did not have strong research skills and thus need further development were left with few opportunities.

Improving Internationalization with an Unexpected Side Effect

While BK 21 PLUS considers the internationalization of graduate education necessary, universities have few options to choose among when internal and external funds for internationalization are limited. Most universities have focused on internationalization at home and short-term overseas experiences for graduate students rather than spending large amounts on recruiting international scholars and students. Specifically, they sought to make numbers that were used as quantitative indicators of internationalization look better, such as the proportion of EMI, dissertations in English, intensive short-term seminars taught by foreign scholars, and the number of presentations at international conferences.

Such internationalization activities might help universities remain in the chosen groups but will be less effective in promoting long-lasting international cooperation through continuous academic exchange among researchers and universities. More worrisome is that some universities, including participating institutions in BK 21, found that their graduate students and faculty (albeit a tiny portion) attended international conferences of dubious academic value

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or published papers in bogus international journals run by pirate academic entities, such as the World Academy of Science, Engineering and Technology (WASET), and the World Research Library. More than 1,000 domestic researchers attended, and thousands of research papers were published in those journals during the BK 21 PLUS period (Choi 2018; Hong 2018). Thanks to the government's swift and strong measures penalizing such academic misconduct, it was fortunately short-lived and never prevalent.

Impact on the National System of Higher Education

Below-Average Performance in Research Productivity

Even though BK 21 PLUS is an HR development program, it has played an important role in improving the overall research productivity of universities in Korea. As already mentioned, because its unique design promotes competition among universities, it has contributed to improvements in the research productivity of both selected and unselected universities. The research team of RAND Education makes clear how it works: because the number of papers as recorded in the SCI was the main evaluation metric in the BK 21 screening process, that number increased in universities participating in the program and in those trying to improve their position to compete for funding (Seong et al. 2008, 48). The number of SCI papers increased by 70 percent, from 29,737 in 2007 to 50,368 in 2012, nationwide during the second phase of BK 21.

During the program's third phase, competition among universities on the new evaluation metrics continued to intensify. As the main evaluation metric changed from quantitative to qualitative (from the number of SCI papers to the impact factor of academic journals), their competition headed in the same direction. Nevertheless, improving research impact or the quality of research papers is not as easy as increasing the number of SCI papers. While the global ranking of the total number of SCI papers published by Korean researchers reached twelfth, the number of citations per article over five years (2014–2018) ranked thirty-third worldwide, which had improved from only thirty-fifth in 2012–2016. Despite such improvements in the total number of SCI papers nationwide, Korea is still behind other advanced countries and remains disappointedly below the average of thirty-five OECD countries regarding citations per paper over five years, as shown in figure 5.3 (Yu 2020).

Gradually Improving the Quality of Graduate Education

What world-class universities have in common may be that they have outstanding graduate programs, to which leading scholars and highly motivated and talented students flock. Even top-tier Korean universities have yet to achieve

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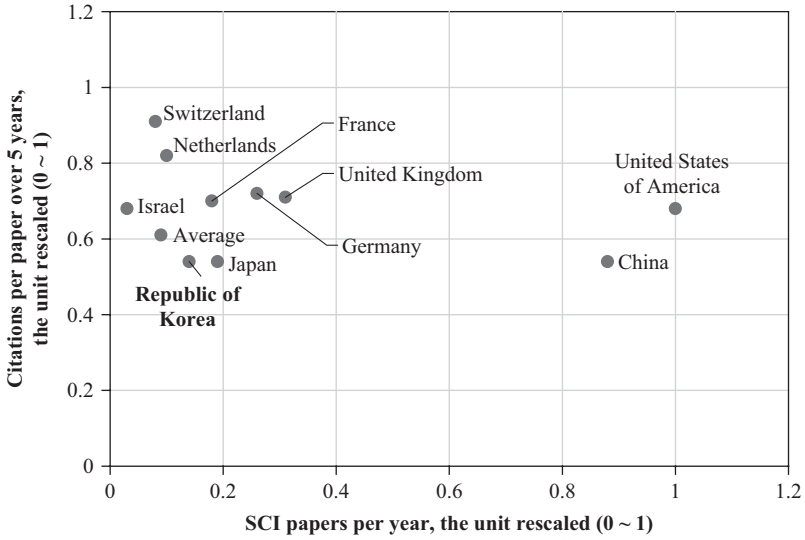

Figure 5.3
Research performance of selected countries (2018). *Source*: Yu, H. J. (2020); reproduced based on figure 5, p. 12.

such a status. Dr. Nampyo Suh, a former Massachusetts Institute of Technology (MIT) professor and later president of the Korea Institute of Science and Technology, lamented at a lecture hosted by Seoul National University in 2008: "Is SNU's graduate school good enough for its name? It is a feeder school [. . .]. If SNU is a feeder school, then it is fair to say that there is no graduate school" (Suh and SNU Faculty of Liberal Education 2018, 30). A decade has passed since then, and regrettably, Korea is still among the countries with a serious "brain drain," so to speak, and the best students educated at top Korean universities still prefer Ivy League universities for their doctoral studies. In fact, the majority of faculty members of top Korean universities were trained there. As a somewhat extreme, but not rare, case in Korean research universities, the economics department at Yonsei University has thirty-two faculty members, and all of them earned their PhDs overseas. This is because even the top universities in the nation are not competitive enough to train them as well as world-class universities do. Professor Hanwoong Yeom (Department of Physics, POSTECH), vice chair of the National Advisory Council for Science and Technology (NACST), chaired by the president of Korea, lamented: "Having been vice chairman of NACST for four years, I have called for the expansion of basic research, and researcher-centered systems favorable for the growth of young scientists. However, little progress has been made in creating an

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environment in which graduate students in STEM fields can enjoy science and focus on research. Where little has changed or improved over a long period is at universities" (Yeom 2021).

The BK 21 program alone cannot definitely solve such a large problem. Yet there are signs of improvement. Kim et al. (2019) found that it has made a decent contribution to upgrading graduate education, by and large. To understand this, they reasoned that to assess whether graduate education in Korea has generally improved, we should look at the extent to which the research capacities of graduates with a doctorate from Korean universities have improved since the BK 21 program. To this end, the research productivity of US doctoral degree recipients and Korean doctoral degree recipients was compared. The difference between the two groups was found to have become smaller since the program began. The authors considered this to be indirect evidence that graduate education in Korea was getting better.

Brain Gain and Drain, Not Much Circulation

Just as BK 21 PLUS has not had a significant impact on the internationalization of participating universities in promoting long-lasting international cooperation and hiring international faculty members, it was not very helpful in retaining them or bringing in talented researchers with doctorates in the science and technology fields. Thanks to the government's "Study in Korea" initiative to attract international students, which was started in the early 2000s, the number of foreign students studying in Korea has increased to about 150,000 so far, reflecting a 78 percent increase in master's programs and 112 percent increase in doctoral programs since 2013.

During the same period, however, the number of full-time international faculty members has steadily decreased by 18 percent (MOE and KEDI 2013–2020). It is unclear what made faculty leave. Among the frequently mentioned reasons for leaving or the intent to leave were an unsatisfactory work environment and benefits, as well as difficulty adapting academically and culturally. A case study of international faculty members working at a leading research university also indicates that even the leading university does not have an adequate research environment for them (Shin and Gress 2018). A professor of engineering at SNU remarked, "Recently, the best Korean researchers have gone to the US and China, and many young scholars in their 30s do not return home" (Kim 2021). Such a brain drain is evidenced by a report by the International Institute for Management Development (IMD). In 2020, Korea scored 5.36 out of 10, ranking twenty-eighth out of sixty-three countries on the brain drain index, which means Korea is losing domestic talent while not attracting skilled foreign professionals (IMD 2020). Apparently, BK 21 was not successful in stopping this trend.

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The Matthew Effect: BK 21 and R&D Funding Going Hand in Hand

As intended, the BK 21 program works to restructure the HE system, as it has selected and subsidized a handful of outstanding departments in each academic field. A good portion of the government funding goes to a dozen universities with strong graduate programs in STEM fields. Specifically, nearly 190 universities in Korea run graduate schools of various kinds. Among them, about 60 institutions that had at least one department selected received funding from the government. Yet roughly 70 percent of the funding was concentrated in the top 10 universities for the duration of the program. In this regard, such persistent financial concentration on a select few may contribute to the stratification of universities by mission (research versus teaching) to some extent. Those universities with more funding are more likely to focus on developing research capacities.

This research-focused mission may be further accelerated by disproportionate project-based R&D subsidies from the government. As of 2019, all the top 10 universities, except for Chonnam National University (CNU), shown in figure 5.2, remained among the top 10 recipients[1] of an R&D budget from the NRF (National Research Foundation of Korea 2021). As such, the increasing concentration of funding on those universities tends to widen the gap between rich and poor. So it leads to an upturn of the former in the world university rankings, but a downturn of the latter. Among the top 100 Korean universities in the QS World University Rankings, except for SNU, which is unchanged over the years, all the other universities in the group, such as KAIST (39th), Korea University (69th), POSTECH (77th), Yonsei University (85th), and Sungkyunkwan University (88th) have all moved up in 2021. All the Korean universities outside the top 100 group moved down.

Sustainability in Question

As we have seen so far, BK 21 PLUS has produced discernable changes in participating universities and the HE system as a whole. Yet it is doubtful that these changes will persist long without funding. This is because, since the BK 21 program offers a scholarship to graduate students through participating research groups, as previously mentioned, its discontinuation would impinge on the research laboratories in STEM fields, where graduate research assistants play a pivotal role. So, to subsidize the labor costs of research groups comparable to BK 21 PLUS, the government should increase R&D funding to universities significantly. This seems implausible because the nation's R&D investment has already peaked in the proportion of the total R&D budget to the gross domestic product in 2021 (Jeon 2021). Moreover, since the BK 21 PLUS funding itself was insufficient for serious curricular and institutional reforms, most of the changes made in department-level research groups were

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budget-reliant and short-term. Even the institutional changes made are rarely irreversible, making it easy for universities to regress.

It is reasonable, therefore, that the government decided to carry on with the BK 21 program for the next seven years (MOE 2019). The fourth phase of the BK21 program (BK 21 FOUR) succeeds BK 21 PLUS and maintains the key features of the third phase. Several modifications are worth noting, however. BK 21 FOUR considerably enlarges funding to 2.9 trillion KRW (3.36 billion USD); changes the composition of research groups by increasing department-level research groups, now called "education-research groups" (the name changed from *sa-up-dan* to *kyoyook-yeonku-dan* to stress their role in preparing graduate students); and significantly reduces the number of small teams. A distinct change in the fourth phase is that, for the first time, a portion of funding (about 13 percent of the total budget to a university) is made available for university leaders and senior managers to plan and implement institutionwide reforms in graduate education. How much each participating university gets depends on the number of selected education-research groups in the university. The program intends to help them accomplish much-needed reforms in graduate education. The government believed that the do-it-yourself approach of letting participating institutions carry them out on their own, as in BK 21 PLUS, might have been the reason behind the slowing of their transformations into research universities. It remains to be seen if BK 21 FOUR can be more successful.

How Successful? From Key Stakeholders' Perspectives

The Government's Assessment

The government calls the BK 21 PLUS a mild success (MOE 2019). On the achievement side, the MOE believes that it works to produce talented researchers in the science and technology fields of high priority—approximately 9,000 master's and doctoral students each year. These graduates, albeit not fully employed, are more likely to get a job compared to nonparticipating graduates. It also recognizes that the research performance of participating faculty and graduate students has been improving. The impact factor of papers published by faculty participants, the key evaluation metric, has steadily increased from 16.5 in 2013 to 21.4 in 2017; similarly, the graduate participants' impact factor has increased from 1.36 to 1.8 during the same period. Faculty who participated in BK 21 PLUS performed better than nonparticipants. Out of 100 outstanding research outcomes of national R&D programs during 2013–2017, the former accounted for about 80 percent, and faculty participants comprise more than half of the highly cited Korean researchers belonging to the top 1 percent in the world.

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Despite these achievements, the MOE has identified some stumbling blocks. The ministry also recognizes that BK 21 PLUS was not very successful in improving the nation's research excellence. It helped produce more SCI papers, but it failed to enhance the research impact (i.e., citations per paper). A scholarship for graduate participants was found insufficient to cover their tuition and living costs, which hindered their focus as graduate students. Moreover, improvements in graduate education have been somewhat neglected, in part because BK 21 PLUS evaluated research groups annually using more research-related metrics. In addition, it has yet to build world-class research universities because BK 21 PLUS focused too much on the performance of department-level research groups and failed to pay adequate attention to the institutional transformation of universities.

The University Sector's Assessment

The mixed feelings of faculty participants Faculty respondents (978 faculty members) claim that BK 21 PLUS is a modest success, with limitations.[2] Many respondents indicated that the program "has increased the research capacity of graduate participants, brought more talented students into graduate school[s,] helped to improve the quality of graduate programs[,] and [helped] graduates find better jobs." More than 95 percent wanted to participate in the next phase of the program, and more than 90 percent said that it would be difficult to maintain graduate schools if the government stops the BK 21 PLUS program.

Despite such a positive assessment of its accomplishments, they mentioned several aspects of the program that compromised its maximal performance. The respondents' complaints were mostly about quantitative evaluation metrics. They thought that a heavy reliance on specific quantitative indicators, such as EMI proportions, to assess a research group's internationalization outcomes limited their capacity to be involved in actual international collaboration. Moreover, measures focusing on individual performance also made it difficult to pursue challenging and collaborative research across disciplines. Too much emphasis on international research results led to a lack of research that addresses Korea's own industrial and social problems.

The mixed feelings of graduate participants Over 3,000 graduate student and young scholar respondents were half satisfied with the program.[3] The survey findings show that graduate participants were satisfied with their overall graduate education, curriculum, educational conditions, scholarship levels, and faculty passion for education. They also indicated that participation in the program was one of the important factors in deciding whether they would apply to that

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graduate school. However, the improvements in educational experiences and lower costs of getting advanced degrees fell short of having them stay in Korea for doctoral studies. Their preference for overseas universities remains high. Graduate students in the humanities and social sciences are more likely to go abroad for doctoral studies than those in STEM fields.

Like faculty participants, graduate participants, although satisfied, complained about becoming fatigued and stressed while joining a research group as a research assistant. Frequently, they had less time available for their personal life and family, as they had to produce more research output to keep getting the scholarship (Lim et al. 2019). They were also dissatisfied with doing performance-oriented research mainly for the purpose of evaluation, which forced them to participate in too many research projects (Kim et al. 2019).

Research-Based Assessment: Inconclusive Findings

Because the BK program lasts for a long time, in-depth evaluations have been conducted at each stage, and many researchers have independently studied what the program has achieved, as well as its likely impact on the HE system. Prior studies have shown that the BK 21 program worked, improving research performance to some extent (Paik and Park 2007; Shin 2009; Kim 2015; Gu and Kim 2018). More recent studies showed that BK 21 PLUS also had a positive effect on preparing talented researchers in diverse fields (Kim et al. 2019, 2020; Lim et al. 2019; Her and Lee 2020). As discussed earlier, however, it is still unclear whether the supposed achievements of the BK 21 program in its various phases can be attributable solely to the program itself. It makes sense that it appears to work because better performers have been chosen for it. A definitive answer is not readily available because we have yet to develop a comprehensive nationwide monitoring system to determine which is the case. For the time being, here are some evidence-based claims.

Analyzing recent data with a sophisticated statistical method, Kim et al. (2019) found some interesting results about the impact of BK 21 PLUS on the quality of graduate education and research performance of participating universities. One of the findings is that the quality of graduate education in Korea has improved to some extent due to this program. However, this achievement is noticeable only in some disciplines, such as engineering and medicine. Another interesting finding is that although research performance has been enhanced through BK 21 PLUS, such an improvement resulted not from an overall improvement in research performance of faculty and recent doctoral graduates, but from that of the latter group only, except for faculty in some academic fields. As such, it stands to reason that BK 21 PLUS, although

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successful, had a differential effect across disciplines and groups regarding research performance.

Conclusion

The government's policy to build world-class research universities for academic excellence in Korea is still ongoing. BK 21, which began in 1999 and will last until 2027, is the first large-scale government-initiated funding program to this end. For almost three decades, a total of 7.9 trillion KRW (9.2 billion USD) has been invested in department-level research groups. This chapter focused on the third phase of BK 21, which started in 2013 and ended in 2020, while briefly touching upon other phases where relevant.

BK 21 PLUS has trained thousands of master's and doctoral researchers annually in academic and national priority fields. It has significantly improved the research performance of the participants. Furthermore, at least a handful of participating universities with relatively large funding from both BK 21 PLUS and national R&D programs have begun to witness desirable changes in governance, academic, and administrative systems, as well as in the necessary internationalization to lay the foundation for building a world-class research university. Nevertheless, even highly regarded research universities in Korea fall short in advanced doctoral education, research excellence, the research environment, and the support systems needed to become a world-class university. As such, they are underperforming in global university rankings.

To look first on the bright side, it is worth noting what has contributed to the success of this program so far. Consistency and financial stability played a critical role. The government's funding programs were generally short-lived. BK 21 is a singular program in this regard; it has been consistently promoted over the decades without significant changes in the program, and funding has increased in each phase. It also has survived progressive and conservative administrations, which is rare in government funding programs since they are typically tightly coupled with the administration's political orientation. Such exceptional features as its consistency and stability might work for participating and willing-to-participate universities in order to plan and drive changes from a longer-term perspective.

The second contributing factor is the competitive mechanism embedded in the program. This mechanism motivated recipients and nonrecipients to improve their performance on the important evaluation metrics, even without an increase in government funding. BK 21 PLUS makes this work in multiple ways, as previously discussed. In a nutshell, regular performance evaluations of

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research groups and participating universities, as well as the resultant adjustment in annual appropriations, should be motivating factors to improve performance. Nonrecipients also had the opportunity to join the program after the midterm evaluation by outperforming participating groups in the same academic field. This might have encouraged them to keep working hard to prepare for the biannual evaluation. The last contributing factor is the way that the funding is used. It is mainly offered as scholarships to graduate students and payments to young doctoral researchers. This contributed to improving their research performance to some extent, by helping them focus on their research. Of course, it is hard to deny that their achievements also were aided by their sacrificing their personal and family lives, which had nothing to do with the program.

Furthermore, BK 21 PLUS has downsides that are likely to have undermined what it intended to achieve. First, it created a somewhat compromised competition system that allowed regional universities to compete not nationally, but rather among universities outside the Seoul area. Giving favor to regional universities in the competition became even stronger in the third phase. This inclusive excellence approach is understandable in that regional universities have long been disadvantaged, given the enduring educational gap between Seoul and regional areas. Regional universities have been calling for a level playing field. Nonetheless, equity in HE can be pursued by other programs and policies. BK 21 is an extensive program specifically designed for academic excellence. As such, had it not pursued excellence and geographical equity in a single program, BK 21 PLUS could have further scaled up academic excellence.

Determining who the funding is for in the government's subsidy programs is essential. BK 21 PLUS targets department-level research groups, neither individuals nor the university itself. This approach may facilitate competition between them and thus lead to academic restructuring if it works out as intended. Yet this very approach may serve as an obstacle to inducing the required changes at the department level and higher. Since BK 21 PLUS planned to subsidize a few outstanding graduate programs in each preclassified academic field, and in fact one to twenty or so departments within a university were chosen, it was unavoidable that nonparticipating departments outnumbered participating ones in most universities. At the individual level, up to 30 percent of faculty in a department were excused from participation for good reasons. The coexistence of participants and nonparticipants then made it difficult to cooperate on such vital matters as curricular and academic reform at the departmental and institutional levels.

Another limitation is that even though this program takes the principle of selection and concentration seriously, its scope was too wide. It is not difficult to imagine that a small number of research universities with strong graduate

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programs could bring in the most funding. Yet all academic fields and departments with at least three professors (for teams, the number varies by academic field) and doctoral programs were still welcome to participate. In fact, more than 100 universities applied for BK 21 PLUS, of which around 60 or so were funded. Had it been more selective and concentrated, it would have nurtured world-class research universities more effectively. Furthermore, this "everyone's invited" approach also made it difficult for already-similar-looking universities to differentiate their roles by their primary mission in HE, a major task for Korean HE, by making many of them unnecessarily focus on research rather than education in their graduate programs.

To become a world-class research university, securing institutional autonomy is paramount. This was also highlighted in an international case study of emerging research universities conducted by the World Bank (Altbach and Salmi 2011), which showed that world-class research universities have features in common, including greater institutional autonomy. Autonomy does not just mean freedom from government intervention. Securing sufficient resources is also an important aspect of autonomy, so universities can carry out essential tasks without relying too much on external resources. Korean universities do not have much autonomy in this respect.

The financial difficulties of Korean universities have intensified due to a decade-long tuition freeze policy and the shrinking demographics of college-aged students. This has made almost all universities in Korea eager to take part in government funding programs when chances arise. Unfortunately, even universities participating in the BK 21 program have regarded it more as a tool for securing financial resources rather than as one for creating a research university. Regarding BK 21 PLUS, like other government-initiated programs, government agencies take accountability more seriously than institutional autonomy. Hence, they tend to monitor participants closely based on the contract terms, which makes those participants feel micromanaged. They would have benefited more from the program had these agencies given them more leeway in spending the funds and managing their performance. This would have facilitated the transformation to a world-class research university, one of the program's main goals.

In the era of globalization and the knowledge economy, nurturing high-quality graduate programs and building world-class research universities are vital but daunting tasks for any nation. The Korean government has endeavored to achieve this goal for a long time, but the results have been somewhat underwhelming. The government has decided, therefore, to try once more, believing that their efforts will work out better this time. In the newly launched fourth phase, a big change in the evaluation and use of funding has been made to

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accommodate the shift in emphasis that stresses the quality of research and, more important, to assist institutionwide reforms by allocating about 53 billion KRW (6 million USD) per year, for the first time since its inception, to twenty leading universities. These extra funds to universities might not be enough to induce them to make the necessary transformation in a timely fashion to create world-class universities, but it surely hints that the Korean government's approach to funding academic excellence may shift gradually from departments to universities. It remains to be seen how this change will work out in the years to come.

Notes

1. Listed in order: SNU (275.6 billion KRW≈319.8 million USD), Yonsei University (209 billion KRW≈242.5 million USD), Korea University (173.8 billion KRW≈201.7 million USD), KAIST (160.5 billion KRW≈186.2 million USD), SKKU (139.4 billion KRW≈161.7 million USD), POSTECH (132.8 billion KRW≈154.1 million USD), Hanyang University (118.8 billion KRW≈137.8 million USD), Pusan National University (106.2 billion KRW≈123.2 million USD), Kyungpook National University (96.5 billion KRW≈112 million USD), and Kyunghee University (80.6 billion KRW≈93.5 million USD).

2. This assessment relies on a survey of 978 faculty members and 3,362 graduate students and young scholars that participated in the BK 21 PLUS (11.6 percent response rate, survey conducted November 20–30, 2018) see Jinyeong Kim, Hakyong Lee, Deokhyun Ryu, Yeongcheol Kim, and Soohan Woo (2019), *BK21 PLUS Program In-depth Assessment*.

3. See Kim et al. (2019).

References

Altbach, Philip. G., and Jamil Salmi. 2011. *The Road to Academic Excellence: The Making of World-Class Research Universities*. Washington, DC: World Bank.

Byun, Kiyong, and Minjung Kim. 2011. Shifting patterns of the government's policies for the internationalization of Korean higher education. *Journal of Studies in International Education* 15 (5): 467–486.

Choi, Yoonwon. 2018. "Top universities published papers in the bogus journals, WASET, disclosed." Korea Center for Investigative Journalism, July 20, 2018. https://newstapa.org/article/Ff8n8 (in Korean).

Gu, Seoungwoo, and Byungjoo Kim. 2018. Analysis of institutional factors affecting research outcomes of higher education institutions with the BK 21 PLUS. *Journal of Economics and Finance of Education* 27 (3): 1–25.

Her, Jung, and Giljae Lee. 2020. Effect of the Brain Korea 21+ on student engagement and learning outcomes: A comparative study employing propensity score matching (PSM). *Journal of Learner-Centered Curriculum and Instruction* 20 (9): 877–905.

Hong, Wooram. 2018. "WASET is not bad? Thousands of Korean scholars attended another fake conference." Korea Center for Investigative Journalism, September 21, 2018. https://newstapa.org/article/CLicE (in Korean).

Institute for Management Development (IMD). 2020. *IMD World Talent Ranking 2020*. Lausanne, Switzerland: Institute for Management Development.

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Jeon, Kyeongwoon. 2021. In the era of R&D 100 trillion KRW, only applied research underway to make money. *Maeil Business News Paper*, January 25, 2021. https://www.mk.co.kr/news/society/view/2021/01/80910/ (in Korean).

Kerr, Clark. 2001. *The Uses of the University.* 5th ed. Cambridge, MA: Harvard University Press.

Kim, Bora, Yujin Kim, Yeseul Jung, Sohui Jeong, Hakrae Kim, and Kyongmee Chung. 2020. Effect of the Brain Korea 21 PLUS project on graduates' performance and satisfaction: Empirical data analysis for a social science department. *Journal of the Korea Academia-Industrial Cooperation Society* 21 (1): 45–60.

Kim, Geumyi. 2021. Seoul National University's letter of apology: Research first, then internationalization. *Maeil Business News Korea*, January 10, 2021. https://m.mk.co.kr/news/society/view/2021/01/28863/ (in Korean).

Kim, Jinyeong. 2015. The effect of grants to graduate students on the research productivity of professors: The case of BK21 project. *Korean Journal of Public Finance* 8 (1): 1–32.

Kim, Jinyeong, Hakyong Lee, Deokhyun Ryu, Yeongcheol Kim, and Soohan Woo. 2019. *BK21 PLUS Program In-depth Assessment*.

Ko, Jangwan. 2020. Higher education system and institutions, Korea. In *Encyclopedia of International Higher Education Systems and Institutions*, edited by. Teixeira Pedro and Shin Jungcheol, 25–62. Dordrecht, Netherlands: Springer.

Korea Development Institute (KDI). 2012. *Feasibility Report of Global EXCEL (Follow-Up Program of WCU & BK 21) and Global PhD Fellowship Program*. Sejong, South Korea: KDI.

Korean Education Statistic Service. 2020. "Statistical brief on graduate schools." Accessed November 1, 2021. https://kess.kedi.re.kr/kessTheme/webzinePop?itemCode=03&webzineSeq=53&menuId=m_02_03_04# (in Korean).

Lim, Kyungsoo, Jeongwook Moon, Eunryeong Son, Hyangran Kim, and Hyejeong Lee. 2019. Doctoral students' experiences of participating in BK 21 PLUS. *Journal of Career Education Research* 32 (1): 119–143.

Ministry of Education (MOE). 2013. *BK 21 PLUS Basic Plan*. Sejong, South Korea: Ministry of Education.

Ministry of Education (MOE). 2013–2020. *Operation and Management Plan for BK 21 PLUS*. Sejong: Ministry of Education.

Ministry of Education (MOE). 2019. *Basic Plan for the Fourth Phase of BK 21*. Sejong, South Korea: Ministry of Education.

Ministry of Education and Korean Educational Development Institute (KEDI). 2013–2021. *Brief Statistics on Korean Education*. KEDI.

National Research Foundation of Korea. 2021. "Korea R&D statistics: Top 10 universities of NRF research funding." Accessed on November 1. 2021. https://stats.nrf.re.kr/ris/main/getDataByMainorg.stats? (in Korean).

Paik, Iilwoo, and Kyungho Park. 2007. Performance analysis of the first stage of Brain Korea 21. *Journal of Economics and Finance of Education* 16 (1): 81–102.

Seong, Somi, Steven Popper, Charles Goldman, David Evans, and Clifford Grammich. 2008. *Brain Korea 21 Phase II: A New Evaluation Model*. Santa Monica, CA: RAND Corporation.

Shin, Jungcheol. 2009. Building world-class research university: The Brain Korea 21 project. *Higher Education* 58 (5): 669–688

Shin, Jungcheol, and Dougla Gress. 2018. Expatriate academics and managing diversity: A Korean host university's perspective. *Asia Pacific Education Review* 19: 297–306.

Suh, Nampyo, and SNU Faculty of Liberal Education. 2008. *Talks on the Reform of Korean Universities*. Seoul: Itreebook.

Trow, Martin. 1999. From mass higher education to universal access: The American advantage. *Minerva* 37: 303–328.

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Um, Mijung. 2013. *Centre of Excellence as a Tool for Capacity-Building—Korea: Innovation, Higher Education and Research for Development (IHERD) Report*. Organisation for Economic Co-operation and Development (OECD). https://www.oecd.org/sti/Korea_case_study.pdf.

Yeom, Hanwoong. 2021. University of the oldies, change your mind. *Kyunghyang Newspaper*, July 21, 2021. https://www.khan.co.kr/opinion/contribution/article/202107210300035 (in Korean).

Yu, Hyunji. 2020. *KISTEP Statistical Brief: 2018 SCI Publications and Citations in Korea*. KISTEP. https://www.kistep.re.kr/board.es?mid=a10306030000&bid=0031&act=view&list_no=35953 (in Korean).

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6

Did Taiwan Academic Excellence Initiatives Build World-Class Universities? Governance, Funding Schemes, and Policy Shifts

Angela Yung Chi Hou

Introduction

Pressured by global competitiveness in higher education (HE), the Taiwanese government started to reform its HE system in the late 1990s, with a particular focus on deregulation, financing, and institutional governance (Hou et al. 2021). In the early 2000s, the central government developed several national strategies to enhance the quality and global competitiveness of Taiwan's HE, including supporting a number of selected universities and research centers through concentrated investment. Given the fact that pursuit of academic excellence and the enhancement of global competitiveness in HE have become part of the national agenda in Taiwan, it was imperative for the government to launch academic excellence initiatives (AEI) to achieve that goal (MOE 2019b, 2019c). In 2005, the Taiwanese government launched the first AEI, the 5-Year 50-Billion Excellence Initiative, aimed at Taiwan having at least one university in the world's top 100 in five years and at least fifteen key departments or cross-campus research centers at the top in Asia in ten years (Department of Higher Education 2011).

As of early 2022, Taiwan's AEIs have undergone three phases from 2005 to 2010 (phase I), 2011 to 2016 (phase II) and from 2018 to 2022 (phase III). The first two phases focused on enhancing international competitiveness and building research capacities. Due to changing administrations, political ideology, and institutional criticism, phase III suddenly shifted to an egalitarian approach instead of a concentration and selection policy as the basis of funding allocation. In the first two phases, the Ministry of Education (MOE) launched three thematic AEIS for different types of universities, including A Development Plan for World Class Universities and Research Centers of Excellence (the Excellence Program) for research universities, Teaching Excellence Initiative for teaching-oriented universities, and Academia-Industry Collaboration for

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universities of technology (Chang et al. 2009; MOE 2011, 2017a, 2017b) with funding of 3.3 billion USD. Moving to the third phase of AEI, MOE announced the Higher Education Sprout Project (HESP) to replace the previous two-phase AEIs, which emphasized university social responsibility and accountability with funding of 2.8 billion USD (MOE 2017a). The new initiative attempted to comprehensively enhance the teaching quality of universities and promote the diversification of HE to secure students' equal right to education. The new administration still hoped to reinforce international competitiveness by supporting four selected universities to achieve world-class status and developing cutting-edge research centers in cooperation with the Ministry of Science and Technology (MOE 2018, 1). To retain and recruit local and global talent, the MOE initiated the YuShan program, an extended but complementary plan to compensate for the AEI's funding cut to those research universities selected in 2018 with additional funding of 180 million USD annually (MOE 2021b). In reality, only a few selected top universities are eligible under this complementary project.

This chapter analyzes the development and impact of Taiwan's AEIs in three phases from 2005 to 2016 (phases I and II) and HESP in 2018 (phase III). The 2018 YuShan Program, considered a part of the extended Excellence Program at the third phase, is also discussed. The conclusion assesses how AEIs in Taiwan have, over the past two decades, supported world-class university building and discusses the challenges that Taiwan HE encountered in creating sustainability in the future.

The Massification of HE in Taiwan, AEIs, and World-Class University Building Syndrome

Over the past decades, the development of HE in Taiwan has been influenced by its Chinese heritage, Japanese culture, and American universities. HE has always been in the spotlight throughout the social transformations and political transitions in Taiwanese society. As a Confucian society, HE in Taiwan has undergone varying stages of transformation from a colonial to a Chinese system, and later shifting to a modern system. According to Chou (2015a), the uniqueness of the system characterized by a combination of Japanese colonization (from 1895–1945), the American influence, its Chinese heritage, and local features indicate "options facing Taiwan in its pursuit of localization and globalization in higher education" (Chou 2015a, 92). Since the 1980s, Taiwanese society has experienced rapid changes in politics, economics, culture, and education. Since the 1990s, governmental polices have moved the formerly elitist education system gradually toward a universal system by inviting the

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private sector to enter HE, adopting a market-driven management approach, enhancing internationalization, and engaging in the pursuit of academic excellence (Chou 2015b; MOE 2019a, 2019b).

As the highest regulatory authority, the MOE administers national educational policymaking and its implementation to raise the overall quality of education and the nation's global competitiveness (MOE 2012b, 2019a). HE in Taiwan features a two-track system of universities and polytechnics. General universities and colleges fall into the category of the university system, while the polytechnic system includes technological universities and colleges and junior technological colleges. The Department of Higher Education and the Department of Technical and Vocational Education under the MOE are in charge of the university and polytechnic systems, respectively.

As indicated, HE in Taiwan expanded significantly in the 1980s, both with respect to increases in the number of institutions and the number of enrolled students. The government of Taiwan allowed individuals and private enterprises to establish HE institutions and upgraded junior colleges to four-year universities. By 2016, the number of HE institutions had increased to 158, largely due to the transformation of junior colleges to four-year universities (MOE 2021a). These quantitative increases demonstrate emphatically that HE in Taiwan has transformed from an elite-type to a universal-type educational system (Hou et al. 2021; Hou and Hill 2021).

Amid flourishing the economic development, social liberalization, and democratization in the 1990s, Taiwan's HE system has become more decentralized. The state was pressured to exert less control and universities continued to seek more autonomy. Furthermore, private institutions were forced to be more competitive and accountable during the marketization and massification of HE in Taiwan (Giroux 2002; Chou 2015b; Shin 2015; Hou et al. 2021). In 2020, Taiwan's HE system was comprised of 149 universities and colleges and 1,244,822 students, with 46,794 teaching staff. There were 102 private universities and colleges, which is 68.5 percent of the overall HE institutions (MOE 2021a).

As Trow (1973, 35) stated, "the steady expansion of higher education appears to some observers to constitute a serious threat to academic standards." While massification expanded access to HE in Taiwan, as it has in other Asian nations, it also increased public concern about the quality of institutions and students, which addresses national concerns about the development of quality assurance management. In response, the Taiwanese government developed a national quality assurance system for HE to undertake mandatory, regular reviews of universities and programs. Founded by the MOE and 153 universities and colleges in 2005, the Higher Education Evaluation and Accreditation Council of

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Taiwan (HEEACT) was commissioned to conduct external reviews of Taiwanese universities and colleges on a regular basis. Hou et al. (2021, 5) depicted the period from 2005 to 2016 as an era of "the pursuit of excellence and quality assurance" in Taiwanese HE. During this period, an external quality assurance framework was formed to assess institutional accountability while the government attempted to give universities more autonomy to pursue academic excellence under these dual ambitions (Hou et al. 2022).

World-Class University-Building Syndrome

Given that the enhancement of the global competitiveness of Taiwanese HE has been highlighted in the national agenda since 2000, universities and academics were pressured to improve their research productivity and international reputation via building their universities into world-class institutions. Much research has highlighted that there is a strong association between building world-class universities and national policy in the form of HE excellence initiatives (Salmi 2009, 2012; Shin and Kehm 2013). Therefore, AEIs have been implemented in an effort to achieve world-class status in East Asia (Yonezawa and Hou 2014). In this regard, building world-class universities was widely considered a national strategy to respond to global challenges and to enhance the international competitiveness of Taiwanese HE. With selection and concentration policies, elite universities are expected to boost research productivity, attract talented scholars, recruit international students, and provide more English-taught programs (Yonezawa and Hou 2014; Salmi 2016; Fu 2017).

To summarize, the pressure to launch AEIs, reflecting an ambition to establish world-class universities in Taiwan is linked to two factors: first, "the frenzied expansion of the higher education sector since the mid-1980s has raised serious concerns about the scarcity of resources available to individual universities and students; second, rising investment in selected research universities in neighboring countries in East Asia has alarmed the Taiwanese government as a potential threat to the country's competitiveness in the long run" (Song and Tai 2007, 326–27). Although worries about the quality of mass education increases, the government's aspirations to build world-class universities became more active and this justified the selection and concentration polices in Taiwanese HE through the first two phases of the AEIs (Cheng, Wang, and Liu 2014; Hou and Hill 2021).

The First Two Phases of AEIs in Taiwan since 2005

The Adoption of the Selection and Concentration Policy

With the selection and concentration policy, the MOE launched three thematic types of AEIs in the first phase from 2005 to 2010 according to national

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objectives and university's features, and then continued the same funding allocation policy in the second phase from 2011 to 2016. These AEIs include the Development Plan for World Class Universities and Research Centers of Excellence (2005–2016), the Teaching Excellence Initiative (2005–2016), and the Technological University Paradigms (2013) (MOE 2011; Hou and Hill 2021).

To create world-class universities, the Taiwanese government first launched the Development Plan for World Class Universities and Research Centers of Excellence in 2005. The second phase from 2011 to 2016 changed the name to The Moving into Top Universities Program, but it continued to aim at building a few world-class universities based on the achievements of the first phase. Overall, this research-focused AEI set five specific goals, including internationalizing top universities and expanding students' global perspectives, promoting the quality of university research and innovation, building the international capacity of faculty and students, strengthening collaboration between universities and industry, and enhancing graduate competence in response to social and market demands (MOE 2011; Department of Higher Education 2011). In addition to these objectives, the first two AEIs were intended to pressure universities and colleges to realign their status with the development of institutional features based on selection and application criteria set by the MOE. For a long time, classifying Taiwanese HE institutions into either research-focused or teaching-focused was considered a controversial issue (Fu, Baker, and Zhang 2020; Huang and Hsu 2021). There is a belief that research universities have better quality than teaching-oriented or vocational HE institutions. Moreover, research universities are more competitive in governmental funding and student recruitment. Therefore, the AEI was also considered as a means to develop the classification system of HE in Taiwan, which would enable an institution to reconfirm whether it is a research-focused or teaching-focused institution.

Governance Model and the Selection Criteria and Process

In the first phase, all universities and colleges were equally encouraged to apply for the research AEI due to political pressure to support different types of HE institutions fairly. Even so, the government set up the basic requirement of at least 10,000 USD spent per student for the applicants. To enhance the global competitiveness of Taiwan's research universities and build several world-class universities, the MOE specifically requested the public university applicants commit themselves to transforming their legal status into a corporation, restructure their organizational system, and develop institutional strategies for the receipt of the funding under two major national policies, the Incorporation of National Universities and Institutional Mergers (MOE 2006). In other words, the government expected that the selected public universities would become

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world-class via the AEIs. Given that research, AEI awardees were recognized as well-reputed universities, several private universities with a close relationship with industry had strong incentives to apply for the competitive project (Huang and Hsu 2021).

To select and execute the research AEI effectively in the first two phases, the MOE developed a governance model in terms of selection procedures, implementation, and assessment. First, the MOE set up a National Advisory committee and invited the Association of Vice Chancellors and the University Advisory Board to develop AEI policies together. Next, the Application Review Committee, created by the MOE, reviewed the potential strengths of the applicants and recommended the best candidates to the Ministry. After a one-year implementation, the AEI awardees were reviewed externally by the Performance Appraisal Committee, particularly on their international networking and collaborations with industry. The Performance Appraisal Committee which consisted of MOE representatives, domestic scholars in HE, and several international experts, evaluated the performance of the research AEI awardees in individual academic fields and conducted an on-site visit to collect feedback from faculty members and students. To increase the efficiency of the AEI, the MOE also set up a project implementation office and a task force, which were mainly responsible for monitoring the progress of the execution at the national and institutional levels, respectively. The task force, made up of representatives nominated by the awardees, assisted the project office in coordinating with institutions, developed key performance indicators (KPIs), and reported on the implementation progress to the MOE on a regular basis (figure 6.1).

All the applicants needed to meet the following four prerequisites. First, 85 percent of teaching faculty members must be above assistant professor with a PhD, because a majority of private universities in the 2000s still recruited teaching staff who were lecturers with only a bachelor's or master's degree. Second, the student/faculty ratio should be less than 25:1. Third, the total number of citations in the last eleven years must be ranked in the top 1 percent worldwide. Fourth, 90 percent of programs of the applying institution must be accredited by HEEACT (MOE 2011; Department of Higher Education 2011). In addition to the goal of topping world rankings, the final awardees in the research AEI were expected to "develop more international counterparts, broaden the global outlook of faculty members and students, and better meet the needs of local industry by turning themselves into [a research and development (R&D)] hub that excels in both academic research and practical applications" (Department of Higher Education 2013a, 27).

A three-stage review process was formed to identify the best proposals. First, all eligible applicants had to submit a proposal in four sections: self-assessment

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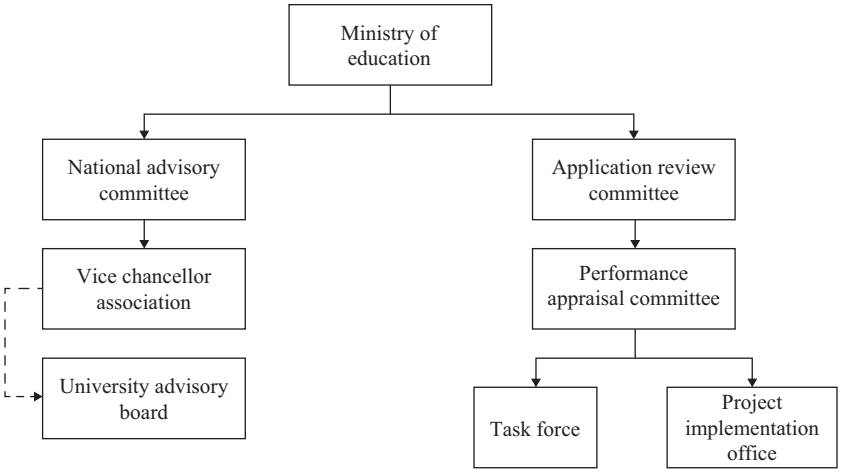

Figure 6.1
The execution structure of AEI at the first and second phases. *Source*: Ministry of Education (MOE) (2006).

mechanisms, predesignated KPIs, strategic plans to achieve these objectives, and a five-year financial budget and planning. Then the MOE assembled the Application Review Committee, consisting of seventeen scholars and domestic senior university administrators, to review the proposals according to qualitative and quantitative standards and criteria and basic information about the university. The proposal had to clearly state institutional management and strategic plans, infrastructure, faculty quality and qualifications, the number of papers published, and a plan for teaching quality enhancement, student selectivity, internationalization, and graduate performance (MOE 2006). When the applicants passed the desk review, they were required to make a presentation to the Application Review Committee and respond to questions about the proposal. Finally, the MOE held a decision-making meeting internally to approve the final awardees and announced the results to the public (MOE 2006).

Based on the review decisions of the first phase, twelve universities out of twenty-nine qualified applicants received a grant in the first phase, from 2006 to 2010. National Taiwan University (NTU) received 500 million USD, which was up to 30 percent of the total funds available, National Cheng Kung University got 17 percent, National Tsing Hua University got 11.2 percent, and National Chiao Tung University got 8.6 percent. Five other recipients were funded with less than 5 percent of the total. Only two private universities were funded initially, but one was dropped after the 2008 annual review (table 6.1).

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Table 6.1
MOE grants that Taiwan's universities received at the first phase (2006–2010) (in million USD)

Institution	2006	2007	2008	2009	2010	2006–2010
NTU	100.0	100.0	100.0	100.0	100.0	500
National Cheng Kung University	56.7	56.7	56.7	56.7	56.7	283.5
National Tsing Hua University	33.3	33.3	40.0	40.0	40.0	186.6
National Chiao Tung University	26.7	26.7	30.0	30.0	30.0	143.4
National Central University	20.0	20.0	23.3	23.3	23.3	109.9
National Sun Yat-sen University	20.0	20.0	20.0	20.0	20.0	100
National Yang Ming University	16.7	16.7	16.7	16.7	16.7	83.5
National Chung Hsing University	13.3	13.3	15.0	15.0	15.0	71.6
National Taiwan University of Technology and Science	10.0	10.0	6.7	6.7	7.3	40.7
National Cheng Chi University	6.8	10.0	6.7	6.7	6.7	36.9
Chang Gung University	10.0	10.0	6.7	6.7	6.7	40.1
Yuan Ze University (private)	7.7	10.0	–	–	–	17.7
Total						1,613.9

Source: Department of Higher Education (2011).

Thirty universities applied for the AEI in the second phase. After careful evaluation of the quantitative and qualitative achievements of each applicant, including an assessment of its world ranking, research and teaching quality, and effectiveness in the first phase, twelve institutions were awarded subsidies through block funding: eleven public universities and one private university (Department of Higher Education 2014) (table 6.2). Considering the public universities' resistance to adopting a corporate-enterprise governance model to force mergers with other institutions, MOE finally stopped its political intervention and eliminated "incorporation" and "merger" as prerequisites at the second phase.

The Other Two Thematic AEIs: The Teaching Excellence Program Versus Technological University Paradigms

After being criticized strongly by several private university presidents (Lee 2005), the government simultaneously launched the other two thematic AEIs from 2005 to 2016, in order to compensate those who were not awarded anything in the research AEI. The Teaching Excellence Program was launched in 2005 by the MOE with a focus on enhancing teaching quality and curriculum reform rather than research output. The regulation titled "Guidelines for Funding Teaching Excellence Initiative and Teaching Resource Centers by Region," published by the MOE, clearly stipulated that the teaching AEI should upgrade

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Table 6.2
MOE grants to Taiwanese universities at the second phase (2011–2016) (in million USD)

Institution	2011	2012	2013	2014–2016	2011–2016
NTU	103	103	103	206	515
National Cheng Kung University	53.3	53.3	53.3	103	262.9
National Tsing Hua University	40	40	40	82	202
National Chiao Tung University	33	33	33	68.7	167.7
National Central University	23.3	23.3	23.3	47.3	117.2
National Sun Yat-sen University	13.3	13.3	13.3	26.7	66.6
National Yang Ming University	16.7	16.7	16.7	33.3	83.4
National Chung Hsing University	10	10	10	20	50
National Taiwan University of Technology and Science	6.7	6.7	6.7	11.3	31.4
National Cheng Chi University	6.7	6.7	6.7	12.7	32.8
Chang Gung University (private)	6.7	6.7	6.7	12.7	32.8
National Taiwan Normal University	6.7	6.7	6.7	13.3	33.4
Total					1,595.2

Source: Department of Higher Education (2014).

teaching quality, faculty development, and student learning outcomes (MOE 2017d). There were several key objectives in the teaching AEI, including promoting faculty development and revisiting the reward system, differentiating HE institutions, and setting up teaching and learning hubs at nine regions around the island (MOE 2012a). The MOE developed nine indicators in three dimensions of teacher professional development, student learning support, and curriculum reform in order to select the best institutions. First, the applicants had to set up an office of faculty development and undertake teacher evaluation and course assessment. Second, the institutions had to have student counseling and support systems in place, develop core competencies to ensure student learning outcomes, and establish a graduate tracking system to enhance student employability. In terms of curriculum reform, 100 percent of course syllabi should be uploaded and published on the university website prior to the new semester. The program's academic committee required the engagement of students, alumni, employers, and experts in the field to get their feedback on curriculum development. An internal quality assurance mechanism was also required to monitor whether course content was relevant to social and job market needs (MOE 2017d).

AEI teacher requirements emphasized that the awardees should enhance institutional learning and teaching infrastructure, develop internal quality assurance mechanisms, and achieve the intended student learning outcomes.

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At the second phase of the teaching AEI (2013–2016), the awardees needed to strengthen curriculum content for knowledge application in the job market, to integrate internship programs into a curriculum map within the credit system, and to nurture talented students and support national economic development. In total, the teaching AEI was awarded to about thirty general universities out of fifty-four applicants in two phases, including seven public universities and twenty-three private universities with funding of 1.67 billion USD (Department of Higher Education 2013b).

The third thematic excellence initiative, called Technological University Paradigms, came later in 2013, at the second phase, with funding of 200 million USD, "particularly aiming at assisting universities of technology to cultivate professionals and to enhance industry-academic cooperation and innovation R&D squarely at the center" (Department of Higher Education 2013b, 3). The regulation of the MOE funding of the Technological University Paradigms required all applying institutions to fulfill four criteria to strengthen university and industry collaboration. The applying institutions were reviewed based on their talent at nurturing policy, research output, and linkage with industries; a well-established governance model to support faculty development; innovation-based incubation between universities and entrepreneurship; and internationalization strategies in linking local and global industries (MOE 2017c). The awardees were required to focus on industry–academic cooperative R&D through technology transfers. Faculty members were expected to improve teaching to equip students with practical skills and knowledge and improve their employability. The awardees also had to establish an incubation and innovation center in accordance with its own characteristics, which would drive the development of Taiwanese local industries. From 2013 to 2016, twelve technology universities (nine public institutions and three private institutions) out of forty-three applications were awarded a total of 200 million USD.

To conclude, these three thematic AEIs, each with a different focus, were initiated by the MOE. In total, twelve research universities, thirty teaching-oriented universities, and twelve universities of technology benefited from the three AEIs. Regarding funding allocation, twelve selected research universities in the research AEI account for 7.3 percent of all Taiwanese HE institutions, with a total of 3.3 billion USD, compared with thirty-one to thirty-three teaching AEI recipients awarded 1.67 billion USD, and twelve from Technological University Paradigms, which received 200 million USD. Therefore, in pursuit of academic excellence and world-class university building, the Taiwanese government allocated 64 percent of the total budget in the first two phases to selected research institutions.

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The Policy Shift at the Third Phase (2018–2022): HE Sprout Project in Search of Egalitarianism

After eight years of the Ma Ying-jeou administration from the Kuomintang (KMT) Party, Dr. Tsai Ing-wen, chairperson of the opposition Democratic Progressive Party (DPP), was elected as the first female president of Taiwan in 2016. The DPP also gained a majority in the Legislative Yuan for the first time. The doctrine of egalitarianism adopted by the Tsai administration, which emphasizes that people should be treated equally regardless of social class, ethnicity, gender, or other personal characteristics, was applied to educational policy (Zha 2013; DDP 2021). The problems created by the AEIs and the policy of world-class university building were strongly criticized in Taiwanese society after President Tsai took office. As a result, the selection and concentration funding schemes by the former KMT government in support of world-class university building was immediately terminated.

With a new focus on university social responsibility, equity, and accessibility, the Tsai administration launched HESP in 2018, with a one-year extension of the second phase of the AEI. HESP is a five-year project, designed to cultivate a variety of high-quality talent at all levels and help universities develop their competitiveness. To achieve these objectives, the universities were encouraged to engage with the local community and pursue global outreach. In contrast to the previous AEIs for the selected universities, HESP awarded a total of 156 institutions with an egalitarian approach. This meant that all types of HE providers were eligible for government grants with no prerequisites. The project is expected to accomplish the following four goals: implementing teaching innovation, developing university features and uniqueness, improving public goods, and fulfilling social responsibilities (MOE 2017a). Likewise, the AEI in the third phase attempted to strike a well-balanced emphasis on teaching quality and research output.

HESP was divided into two parts. The first was to improve university education comprehensively and to promote HE diversification in order to secure students' right to education. In the first part, all 156 universities applied for AEIs and competed for 326.7 million USD in funding annually. In addition, there were two other subsections under this AEI: 20.6 million USD for the University Social Responsibility (USR) program and 23.97 million USD for the Support for Underprivileged Students program.

The second part, called Global Taiwan, aimed at promoting excellence at universities and building leading research centers. Only research universities were eligible to apply according to the review criteria, including world-class

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academic performance, cooperation with top foreign research universities and international industries, global talent recruitment, and graduates working at research universities or international companies (MOE 2017b). The government allocated 182.19 million USD to four research universities and twenty-four research centers. The four selected universities were NTU, National Cheng Kung University, National Chiao Tung University, and National Tsing Hua University (Huang and Hsu 2021). In total, the overall funding allocated in HESP was 3.1 billion USD from 2018 to 2022.

Compared with the more than 64 percent of funding allocated to twelve research universities and research centers in the first and second phases, only 35.8 percent was distributed to research-oriented institutions in the third phase. In particular, the funding for NTU dropped drastically, from 100 million USD in the previous AEI to 56.7 million USD in HESP. In 2018, the project shifted its focus to teaching quality, learning outcomes, and university social responsibility based on the concept of egalitarianism (Hou et al. 2020). The number of selected research universities also decreased from twelve to only four.

The YSP as an Extended AEI

A complementary program during the second part of HESP was a new type of AEI, proposed by the MOE and titled the YuShan Project (YSP). The YSP aimed to support research universities in attracting top international scholars by providing researchers with internationally competitive salaries in 2018. Only the four selected research universities or the awardees of the research AEIs in the first and second phases were eligible to apply. The MOE set two objectives: to expand the international academic capacity in Taiwan's academic environment and to enhance the international influence of Taiwan's HE (MOE 2021b). The MOE aimed to recruit more than 100 YSP researchers in both categories every year. Although this did not mean that the egalitarian approach was totally abandoned in favor of elitism, the policy pendulum was, to a certain extent, swinging from left to right.

In the complementary AEI, the applying universities included the four selected universities in Global Taiwan and other research universities awarded with research centers and funded with more than 1.86 million USD in HESP. They had to target the recruitment of top researchers in two categories—YSP Scholar and YSP Young Scholar. The researchers in the former category should be Nobel Prize winners or equivalently recognized. Their qualifications included working at "a leading international research institution or an internationally renowned company for at least 10 years and having an international academic reputation or international cutting-edge expertise in a core technology, and excellent experience in leading an academic or industrial research

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team" (MOE 2021b, 1). The winners would receive additional remuneration of up to 185,000 USD for three years. Even so, it remained challenging for the selected research universities to attract global researchers to Taiwan.

In addition to attracting top senior scholars, the selected universities were encouraged to attract junior scholars with the greatest research potential. In this category, the applicant should have earned their highest educational qualification in the previous ten years and also "worked at a leading international research institution or an international renowned company for at least five years with exceptional contribution to the area of [their] academic expertise" (MOE 2021b, 1). They were granted up to 55,600 USD remuneration in the first year, in addition to their regular salary paid by the university for five years. Both senior and junior scholars were expected to be productive and influential in their specific areas and to develop international research networks in collaboration with Taiwan's local academics (MOE 2021b).

The MOE assembled an Application Review Committee with twelve members to assess the proposals submitted by the selected research universities. The members of the committee consisted of MOE representatives, highly reputed academics from Academia Sinica, and several leading international scholars in five fields: engineering, life science and agriculture, medicine, social sciences, and humanities. Each proposal was initially reviewed externally by three reviewers, and their comments were sent to the Application Review Committee for a final decision (MOE 2021b).

In total, 50 YSP Scholars and 121 Young Scholars were recruited by thirteen universities from 2018 to 2020. Basically, they were recruited as full-time faculty members, like other local teaching staff except those on short-term contracts. It was found that the four selected universities in HESP hired 73 percent of recruitments (HEEACT 2020). In addition, 31 percent of YSP Scholars and Young Scholars were in the field of engineering, followed by 26 percent in science, 13 percent in life science and agriculture, 13 percent in social sciences, 11 percent in medicine, and 5 percent in the humanities. Analyzing the performances of YSP Scholars, on average, their H-index in engineering, medicine, and life science and agriculture was above 30.

Evaluation of AEI Outcomes and the Impact on Taiwanese HE

Overall Outcomes of the AEIs

An increase of research outputs in the first two phases but a slight drop in the third Did Taiwan actually build several world-class universities with the support of the AEIs in the first two phases? The data showed that there was a

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significant increase in the number of universities in the top 500 and in the quantity and quality of research output from 2005 to 2016. The number of top-ranked Taiwanese universities rose from five in 2005 to seven in 2016 in the Shanghai Academic Ranking of World Universities (ARWU); from one in 2005 to eleven in 2016 in the QS World University Rankings; and four in 2010 to seven in 2016 in the *Times Higher Education* (THE) World University Rankings. On average, more than seven Taiwanese universities were ranked in the top 500 by 2016. Regarding research output, the total number of publications almost doubled from 16,126 in 2005 to 26,271 in 2016 according to Web of Science (WOS). When it came to citation impact, it increased from 0.88 of 2005 to 0.96 of 2016 (Huang and Hsu 2021). Salmi (2016, 18) noted that Taiwan's AEIs "have facilitated sustained investment in support of their top universities." However, the worries about the reliability of global rankings and an obsession with global rankings in Taiwanese society grew at the same time. Chou and Chan (2016, 445) highlighted that the pursuit of excellence and becoming world-class drove "the SCI and SSCI-focused mentality imbedded in all faculty reward and evaluation systems" across all types of Taiwan HE institutions.

Given that much literature has highlighted that the concentration of resources in a few selected universities would "lead to a neglect of [. . .] ordinary universities" (Cremonini et al. 2013, 101), the Taiwanese government, as requested by the academic community, started to review the impact and effectiveness of the selection and concentration policy and AEIs on HE (Hou, Ince, and Chiang 2013). First, several Taiwanese university presidents and scholars criticized the fact that the whole review process, funding allocation, and decision-making mechanism of the AEIs lacked transparency, contained conflicts of interest, and weakened social justice in Taiwanese society (Lee 2005; Liu 2014). As the former president of the Private University Association, Dr. Mu Tzung-Tsann, indicated, "It is unfair to all private institutions [that] we are not invited by the MOE to submit the proposals at all. Indeed, the AEIs review procedures act like a black box in Taiwan[ese] higher education" (MOE 2006, 64). The 2016 MOE report concluded that funding sustainability, an unclear definition of internationalization, and limited support for the operation of research centers were key challenges faced by the AEIs in the first two phases (Hou, Chen and Tsai 2016).

At the third phase of the AEI, featuring an egalitarian approach, Taiwan's academics expressed other concerns over whether the global competitiveness of Taiwan's top research universities would be gradually eroded. Seemingly, these concerns were justified. According to WOS, the number of the papers published by the four selected Taiwanese universities in the second part, Going

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Global (NTU, National Cheng Kung University, National Chiao Tung University, and National Tsing Hua University) dropped drastically from 2015 to 2019 (table 6.3). A similar drop followed in their global rankings. After 2016, the positions of the four universities dropped drastically in the NTU Rankings, a world university ranking mainly measuring institutional performance by scientific publishing output for world universities (NTU 2021). In the NTU Rankings, NTU was ranked 112 in 2016 and 139 in 2020; National Cheng Kung University 320 in 2016 and 455 in 2020; National Tsing Hua University 361 in 2016 and 437 in 2020; and National Chiao Tung University fell from 466 to 601–650. It was discussed whether the funding cut actually led to their declining position in global rankings or whether discontinuity and a lack of consistency in policymaking in Taiwanese HE were the key issues due to political intervention (Huang and Hsu 2021). No matter what the reason, one thing for sure was that the pendulum had swung back and forth in Taiwan's AEI policy; politics often interfered with HE policy and influenced decision-making in Taiwan's national agenda.

The teaching and vocational AEIs in the first two phases The other two thematic AEIs, with a focus on teaching and learning and collaboration with industry, achieved some results. They set up a professional center for faculty development and revised the reward systems, with a focus on teaching and student counseling services; developed a graduate student tracking system; recruited employers for the Curriculum Committee; provided a capstone course for seniors, entrepreneurship, and innovation, and launched internship programs. According to the report of the Research, Development, and Evaluation Commission, Executive Yuan (2012), more than 97 percent of the new faculty members in the Teaching and Vocational AEI awardees attended training workshops after recruitment, more than 109,777 students took capstone courses,

Table 6.3
Number of publications of four selected Taiwan's universities by WOS

Database	WOS Ranking				
Year	2015	2016	2017	2018	2019
National Chiao Tung University	1,585	1,574	1,469	1,449	1,645
National Cheng Kung University	2,506	2,491	2,319	2,233	2,369
National Tsing Hua University	1,714	1,674	1,572	1,512	1,681
NTU	5,055	4,740	4,679	4,620	5,282
Average of the four institutions	2,715	2,620	2,510	2,453	2,744

Source: Authors' calculations.

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116,202 students enrolled in entrepreneurship and innovation courses, 31,984 students participated in international programs, 439,357 graduates in teaching awardees, and 475,692 graduates in vocational awardees registered in the institutional alumni database as of 2011.

The evaluation report published by Control Yuan (2016), however, pointed out some critical issues that still existed after the ten-year implementation of teaching and vocational AEIs, including the homogeneity of the HE system, no specific features created by individual institutions, an overemphasis on basic infrastructure establishment, and no common management framework for regional teaching and learning hubs. The government admitted that the aim of the thematic AEIs at so-called excellence status in terms of teaching was not fully reached by the end of the project. Even so, AEIs in Taiwan guided participating institutions to pay more attention to teaching quality and student learning outcomes in general. Nevertheless, varying stakeholders' engagement in institutional governance and management, particularly employers and students, has become the norm in AEI-awarded institutions, which are encouraged to strengthen links to the economy and improve internal efficiency (Hou et al. 2021).

Did Different Thematic AEIs Facilitate a Dynamic Classification of HE Institutions in Taiwan?

As Taiwan HE was moving to mass access after 2000, a call for "the classification of the HE to avoid the duplicate efforts dedicated by the higher education institutions" was getting stronger and stronger (Fu 2017, 179). In a Confucian HE system like Taiwan's, the state often exerts strong control over entry to tertiary education and "national research universities are on top tier and low cost private (and often commercial) vocational colleges at the bottom," which legitimates "the formation of a layer of leading research universities" (Marginson 2011b, 594). Research-oriented institutions were more desirable in the eyes of students and parents in a Confucian society. Hence, it was a complex and political issue in Taiwan, which pressured university presidents into declaring that the universities were not teaching-oriented universities but instead were research-oriented.

As indicated here, developing a classification system of HE in Taiwan was one of the objectives of the AEIs. Diversifying the themes of the AEIs as an externally vital force was expected to facilitate a new classification in Taiwan's HE system. It was believed that the quality of Taiwanese HE as a whole would be promoted and recognized domestically and internationally. Universities and colleges would also be encouraged to characterize their features and redefine their mission and vision to be awarded with the right AEI track. The final list

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of AEI awardees in the first two phases demonstrated that the MOE policy achieved this goal.

Although Taiwan's case demonstrates that a variety of AEIs would facilitate a dynamic HE system, the pursuit of world-class universities also contributes to institutional isomorphism in Taiwanese HE. For example, Taiwan's universities with less funding performed even better and grew faster in research productivity in the first two phases (Fu et al. 2020). It was argued that the MOE did not successfully develop a well-structured classification system in Taiwanese HE. Fu (2017) identified two driving factors behind this: one was isomorphism (DiMaggio and Powell 1983), and the other was the changing landscape of scientific production. Influenced by selected research universities, several teaching-oriented universities and universities of technology, such as China Medical University and National Taipei University of Technology, made great efforts to transform themselves into active science producers.

A Shift from a Focus on Research Output to a Focus on Social Impact at Research Universities

Salmi (2016, 18) observed that "policy makers and university leaders must keep in mind the risk of harmful effects on teaching and learning quality because of the research emphasis of most excellence initiatives." Lo (2019) argued that the process of world-class university building resulted in homogenization under the influence of the Western hegemony and the weak connection between universities and local communities in pursuit of academic excellence. Chang, Nyeu, and Chang (2015, 261) contended that "global rankings and league tables that emphasize research have pushed Taiwan's institutions to pursue research over teaching in order to enhance their rankings" and AEIs in the first two phases strengthened this collective mentality in Taiwan. The HEEACT accreditation results showed that that few selected universities of the research AEI failed to pass 100 percent program accreditations compared to private universities awarded the teaching AEI, which led to the public's increased apprehension over the quality of teaching at the selected research universities (HEEACT 2021; Hou 2012). Chang (2014), which studied the impact of the AEIs in two case universities, revealed similar findings.

The heavily debated issue of elitism versus egalitarianism in Taiwanese society led to the emergence of HESP, which was regarded as a reaction to extreme elitism and an obsessive pursuit of research production and global rankings and as an attempt to engage the AEI awardees in local communities (Hazelkorn 2011; Mok 2016; Hou et al. 2021). For example, in 2011, NTU invested only 8 percent of its 2,400,000 TWD (155,000 USD) budget in teaching-related activities and invested a high proportion of its funding in research

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capacity-building and publications. In June 2020, NTU first issued the *University Social Responsibility and Sustainability Report*, which demonstrates its transmission to engaging a variety of HE stakeholders and maximizing their social impact (NTU 2020).

Conclusion

This chapter analyzed Taiwan's experience with AEIs that it launched since 2005 as a transformative policy, and the evolution from the aim of world-class university building to the aim of social impact and responsibility, from a selection and concentration-based funding scheme to an egalitarian approach, and from inequality toward a well-balanced approach. As Lo (2019, 4) argued, "[O]n this basis, it is suggested that the reorientation reveals an attempt to balance the external/global trends and requirements (which are revealed by the world-class movement) and the internal/local pressures (which are institutionalized by democratic elements in higher education governance)." Although the Tsai administration reoriented the focus of previous AEIs, the launch of YSP demonstrated that establishing world-class universities and attracting global talent remain desirable for Taiwan's future (Hou et al. 2020). In other words, the AEIs remain necessary if the Taiwanese government would like to continue its impressive economic progress and global influence by building several world-class universities. For the long term, only a privileged few can help the government reach this goal (Hou et al. 2013). As Altbach (2013, 317) stated, "[R]esearch universities generate growing enthusiasm worldwide. Countries come to the conclusion that such institutions are the key to gaining entry into the knowledge economy of the twenty-first century."

In the first two phases, it was found that Taiwan successfully established a few top-ranked research universities with a significant increase in research output and supported a group of teaching-oriented universities to institutionalize internal mechanisms to ensure teaching quality and learning resources. Although there has been remarkable progress in the implementation of AEIs in Taiwan, some issues remained unresolved, particularly inequality, discontinuity, and sustainability. To conclude, the Taiwanese case has demonstrated that the government is still playing a dominant role in AEI policymaking and implementation, which will likely dilute social trust and raise university anxiety. In examining the impact of Taiwan's AEIs in three phases, it should be noted that clear vision, institutional features, favorable governance, and sufficient resources remain crucial for any university seeking to transform itself into a world-class university via the AEIs (Salmi 2016).

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References

Altbach, Philip G. 2013. Advancing the national and global knowledge economy: The role of research universities in developing countries. *Studies in Higher Education* 38 (3): 316–330.

Chang, Dian-Fu. 2013. The challenges for establishing world-class universities in Taiwan. In *Institutionalization of World-Class University in Global Competition*, edited by Jung Cheol Shin and Barbara M. Kehm, 185–201. Singapore: Springer.

Chang, Dian-Fu, Cheng-ta Wu, Gregory S. Ching, and Chia-wei Tang. 2009. An evaluation of the dynamics of the plan to develop first-class universities and top-level research centers in Taiwan. *Asia Pacific Education Review* 10 (1): 47–57.

Chang, Dian-Fu, Fong-Yee Nyeu, and Hsiao-Chi Chang. 2015. Balancing quality and quantity to build research universities in Taiwan. *Higher Education* 70 (2): 251–263.

Cheng, Ying, Qi Wang, and Nian Cai Liu. 2014. How world class universities affect global higher education. In *Global Outreach of World-Class Universities: How It Is Affecting Higher Education Systems*, edited by Ying Cheng, Qi Wang, and Nian Cai Liu, 1–13. Rotterdam, Netherlands: Sense Publishers.

Chou, Chuing Prudence. 2015a. Higher education development in Taiwan. In *Mass Higher Education Development in East Asia: Strategy, Quality, and Challenges*, edited by Jung Cheol Shin, Gerard A. Postiglione, and Futao Huang, 89–104. Singapore: Springer.

Chou, Chuing Prudence. 2015b. Who benefits from Taiwan's mass higher education? In *Mass Higher Education Development in East Asia: Strategy, Quality, and Challenges*, edited by Jung Cheol Shin, Gerard A. Postiglione, and Futao Huang, 231–244. Singapore: Springer.

Chou, Chuing Prudence, and Chi-Fong Chan. 2016. Trends in publication in the race for world class university: The case of Taiwan. *Higher Education Policy* 29 (4): 431–449.

Control Yuan. 2016. *Evaluation Report of Teaching Excellence Program and Technological University Paradigms*. Taipei: Control Yuan Taiwan.

Cremonini, Leon, Paul Benneworth, Hugh Dauncey, and Don F. Westerheijden. 2013. Reconciling republican "Egalité" and global requirements. In *Institutionalization of World-Class University in Global Competition*, edited by Jung Cheol Shin and Barbara M. Kehm, 45–58. Singapore: Springer.

Democratic Development Party (DDP). 2021. Official website. Accessed April 1, 2021. https://www.dpp.org.tw/en/about.

Department of Higher Education. 2011. *Development Plan for World-Class Universities and Research Centers of Excellence*. Accessed April 1, 2019. http://140.113.40.88/edutop/index_1.phpw.edu.tw/high/itemize.aspx?itemize_sn=3520&pages=1&site_content_sn=1234 (in Chinese).

Department of Higher Education. 2013a. *Higher Education in Taiwan 2012–2013*. Taipei: Ministry of Education.

Department of Higher Education. 2013b. *A List of Teaching AEI Awardees*. Taipei: Department of Higher Education.

Department of Higher Education. 2014. *Funding for 12 Selected Universities by Moving into Top Universities Program*. Accessed November 1, 2019. https://depart.moe.edu.tw/ED2200/News_Content.aspx?n=90774906111B0527&sms=F0EAFEB716DE7FFA&s=BA25383ABEF349 (in Chinese).

DiMaggio, Paul J., and Walter W. Powell. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review* 48 (2): 147–160.

Fu, Yuan-Chih. 2017. Science production in Taiwanese universities, 1980–2011. In *The Century of Science*, 173–203. Bingley, UK: Emerald Publishing Limited.

Fu, Yuan-Chih, David P. Baker, and Liang Zhang. 2020. Engineering a world class university? The impact of Taiwan. *Higher Education Policy* 33 (3): 555–570.

Downloaded from http://direct.mit.edu/books/book-pdf/2218384/book_9780262376693.pdf by guest on 18 November 2024

Giroux, Henry. 2002. Neo-liberalism, corporate culture, and the promise of higher education: The university as a democratic public sphere. *Harvard Educational Review* 72 (4): 425–464.

Hazelkorn, Ellen. 2011. *Rankings and the Reshaping of Higher Education: The Battle for World-Class Excellence*. London: Palgrave Macmillan.

Higher Education Evaluation and Accreditation (HEEACT). 2020. *A Meta-Evaluation of Yushan Scholar Program in Taiwan*. Taipei: HEEACT.

Higher Education Evaluation and Accreditation (HEEACT). 2021. *Accreditation Results*. Accessed December 20, 2020. https://www.heeact.edu.tw/1151/1194/2785/ (in Chinese).

Hou, Angela Yung-Chi. 2012. Impact of excellence programs on Taiwan higher education in terms of quality assurance and academic excellence, examining the conflicting role of Taiwan's accrediting agencies. *Asian Pacific Educational Review* 13 (1): 77–88.

Hou, Angela Yung-Chi, and Christopher Hill. 2021. What are the challenges for building world class universities in Taiwan? Assessing Taiwan's excellence initiatives since 2005. In *Higher Education in Taiwan: Global, Political and Social Challenges and Future Trends*, edited by Angela Yung-Chi Hou, Tung-liang Chiang, and Sheng-Ju Chan, 83–101. Singapore: Springer.

Hou, Angela Yung-Chi, Christopher Hill, Chao Yu Guo, Sandy Tsai, and Dewin R. Justiniano Castillo. 2020. A comparative study of relationship between the government and national quality assurance agencies in Australia, Japan, Malaysia and Taiwan: Policy change, governance models, emerging roles? *Quality in Higher Education* 26 (3): 284–306.

Hou, Angela Yung-Chi, Christopher Hill, Zoe Hu, and Lily Lin. 2022. What *is* driving Taiwan government for policy change in higher education after the year of 2016—in search of egalitarianism or pursuit of academic excellence? *Studies in Higher Education* 47 (2): 338–351.

Hou, Angela Yung-Chi, Karen Hui Jung Chen, and Sandy Tsai. 2016. *A Report on the Study of International Top Universities in Taiwan and Worldwide*. Taipei: Ministry of Education.

Hou, Angela Yung-Chi, Martin Ince, and Chung-Lin Chiang. 2013. The impact of excellence in Taiwan higher education. In *Building World-Class Universities: Different Approaches to a Shared Goal*, edited by Qi Wang, Ying Cheng and Nian Cai Liu, 33–53. Rotterdam, Netherlands: Sense Publishers.

Hou, Angela Yung-Chi, Tung-liang Chiang, Sheng-Ju Chan, and I-Jung Grace Lu. 2021. Historical development of higher education in Taiwan from past to present. In *Higher Education in Taiwan: Global, Political and Social Challenges and Future Trends*, edited by Angela Yung-Chi Hou, Tung-liang Chiang, and Sheng-Ju Chan, 3–25. Singapore, Springer.

Huang, Jong-Tsun, and Yuan-Man Hsu. 2021. Challenges and prospect for Taiwan higher education. In *Higher Education in Taiwan: Global, Political and Social Challenges and Future Trends*, edited by Angela Yung-Chi Hou, Tung-liang Chiang, and Sheng-Ju Chan, 249–268. Singapore: Springer.

Lee, Richard Chia-Tung. 2005. A big joke and a super waste in higher education: The 5-year excellence initiatives. http://erdos.csie.ncnu.edu.tw/~rctlee/article/940625.htm (in Chinese).

Liu, Ko-chen. 2014. A discourse analysis on "stepping towards premier university" policy in Taiwan: the perspective of post-structuralism. *Taiwan Journal of Sociology of Education* 14 (2): 37–71.

Lo, William Yat Wai. 2019. Taiwan: From "world-class" to socially responsible. *International Higher Education* (98): 27–28.

Marginson, Simon. 2011b. Higher education in East Asia and Singapore: Rise of the Confucian model. *Higher Education* 61 (5): 587–611.

Ministry of Education (MOE). 2006. *The Execution Structure of Excellence Initiatives*. Taipei: MOE.

Ministry of Education (MOE). 2011. *Moving into World Class Universities*. December 1, 2021. http://140.113.40.88/edutop/modules/catalog_1/edutop_about/upload/20111130192552.pdf (in Chinese).

Ministry of Education (MOE). 2012a. *The MOE Guidelines for Funding Teaching Excellence Initiative and Teaching Resource Centers by Region*. Taipei: Ministry of Education (MOE).

Downloaded from http://direct.mit.edu/books/book-pdf/2218384/book_9780262376693.pdf by guest on 18 November 2024

Ministry of Education (MOE). 2012b. Department of Education. Accessed August 19, 2018. https://english.moe.gov.tw/cpview-4-15155-8F594-1.html.

Ministry of Education (MOE). 2017a. *Higher Education Sprout Project*. Taipei: Ministry of Education (MOE).

Ministry of Education (MOE). 2017b. *The Launch of Higher Education Sprout Project Officially*. Accessed April 1, 2019. https://www.edu.tw/News_Content.aspx?n=9E7AC85F1954DDA8&s=C85106C3E60F68F5 (in Chinese).

Ministry of Education (MOE). 2017c. *The Regulation of MOE Funding the Technological University Paradigms*. https://www.rootlaw.com.tw/LawArticle.aspx?LawID=A040080041020400-1060116 (in Chinese).

Ministry of Education (MOE). 2017d. *The Revised Regulation of the MOE Funding for Teaching Excellence Initiatives and Regional Teaching Hubs*. https://edu.law.moe.gov.tw/LawContent.aspx?id=FL048409 (in Chinese).

Ministry of Education (MOE). 2018. *Higher Education Sprout Project: Sustained Progress and Rise of Universities in Taiwan*. Accessed August 19, 2018. http://english.moe.gov.tw/public/Attachment/7121917593271.pdf.

Ministry of Education (MOE). 2019a. *Education in Taiwan 2019–2020*. Taipei: Ministry of Education (MOE).

Ministry of Education (MOE). 2019b. *Major Polices*. Taipei: Ministry of Education (MOE).

Ministry of Education (MOE). 2019c. *University Act Revised 2005*. Taipei: Ministry of Education (MOE).

Ministry of Education (MOE) 2021a. *Statistics of Universities and Colleges in Taiwan*. https://stats.moe.gov.tw/files/important/OVERVIEW_U03.pdf (in Chinese).

Ministry of Education (MOE). 2021b. *YuShan Project*. https://yushan.moe.gov.tw/TopTalent/EN.

Mok, Ka Ho. 2016. *The Dangers in Asia's Quest for World-Class Universities*. Accessed January 18, 2018. https://www.timeshighereducation.com/blog/dangers-asias-quest-world-class-universities.

National Taiwan University (NTU). 2020. *2019 NTU Social Responsibility and Sustainability Report*. Taipei: National Taiwan University (NTU).

National Taiwan University (NTU). 2021. *NTU Ranking-World University Ranking*. http://nturanking.csti.tw/.

Research, Development and Evaluation Commission, Executive Yuan. 2012. *Evaluation Report of Teaching Excellence Program and Technological University Paradigms at the Second Phase*. Taipei: Research, Development and Evaluation Commission.

Salmi, Jamil. 2009. *The challenges of establishing world class universities*. Washington, DC: World Bank.

Salmi, Jamil. 2012. The road to academic excellence: Lesson of experience. In *The Road to Academic Excellence*, edited by Philip G. Altbach and Jamil Salmi, 323–347. Washington, DC: World Bank.

Salmi, Jamil. 2016. Excellence initiatives to create world-class universities: Do they work? *International Higher Education* (87): 17–18.

Shin, Jung Cheol. 2015. Mass higher education and its challenges for rapidly growing East Asian higher education. In *Mass Higher Education Development in East Asia*, edited by Jung Cheol Shin, Gerard A. Postiglione and Futao Huang, 1–23. Singapore: Springer.

Shin, Jung Cheol, and Barbara M. Kehm. 2013. The world-class university across higher education systems: similarities, differences and challenges. In *Institutionalization of World Class University in Global Competition*, edited by Jung Cheol Shin and Barbara M. Kehm, 275–286. Singapore: Springer.

Song, Mei-Mei, and Hsiou-Hsia Tai. 2007. Taiwan's responses to globalisation: Internationalisation and questing for world class universities. *Asia Pacific Journal of Education* 27 (3): 323–340.

Downloaded from http://direct.mit.edu/books/book-pdf/2218384/book_9780262376693.pdf by guest on 18 November 2024

Trow, Martin. 1973. *Problems in the Transition from Elite to Mass Higher Education*. Berkeley, CA: Carnegie Commission on Higher Education.

Yonezawa, Akiyoshi, and Angela Yung Chi Hou. 2014. Continuity and transformation: Continuous challenges for world-class status among universities in Taiwan and Japan as aging societies. In *How World-Class Universities Affect Global Higher Education*, edited by Ying Cheng, Qi Wang, and Nian Cai Liu, 85–102. Rotterdam, Netherlands: Sense Publishers.

Zha, Qiang. 2013. Egalitarianism in Canadian higher education: Retrospect and prospect. *International Journal of Chinese Education* 2 (1): 135–161.

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7

Academic Excellence Initiatives: The Danish Case

Lise Degn

Introduction

As described many times in the growing literature on higher education (HE), reforms inspired by the rationale of New Public Management (NPM) have swept through Europe and the rest of the world since the late 1980s, and Denmark is no exception. There, the reforms of the HE system have focused mainly on the overarching ideas of quality and relevance by attempting to make Danish HE institutions more competitive, better at collaborating with business and industry, and better at attracting the best minds in the world to improve the quality of public research until it reached the top international level. As the government pointed out in 2006: "Universities that are doing well should be rewarded. And poor quality should have consequences" (Danish Government 2006).

In terms of this final goal of having excellent research at the top international level, Denmark is doing well. In 2012, a comparative study of research policies in a number of European countries introduced the idea of the "Danish miracle" in relation to research (Öquist and Benner 2012). The miracle consisted in a marked improvement of research performance, measured as highly cited, high-impact publications, over a relatively short period of time compared to its Nordic neighbors, among others. However, by the early 1990s, the Danish research system demonstrated a focus on supporting excellence in research, for example, with the first establishment of Centers of Excellence (CoE), funded by the Danish National Research Foundation (DNRF). The Danish version of excellence was slightly different, however, as Aksnes et al. (2012) point out in their analysis of the DNRF and the initial CoE: "Although these grants were considerably larger than those normally given by the traditional research councils, critical voices argued that the consequences of following the CoE strategy would be that the money was distributed in a more egalitarian way than

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under the original Max Planck Institute idea." Despite this more Nordic interpretation of the concept, there is no doubt that excellence has been on the research policy agenda in Denmark for several decades.

The focus on excellence was reinvigorated by the turn of the millennium, when research excellence became an expressed goal of various Danish governments, particularly because such research excellence was seen as a key resource in the knowledge economy of the future (Danish Government 2015). Most initiatives aimed at research excellence, however, have been distributed through research councils and have all targeted individual researchers or research groups, such as various Elite Researcher funding schemes that were established in the 2000s and 2010s. When it comes to institutional excellence, as well as the definition of an academic excellence initiative (AEI) applied in this book, Denmark has had only one such initiative, focusing on the institutions themselves—namely, the UNIK (Investment Capital for University Research) initiative, discussed later in this chapter. This funding program was so heavily intertwined with the simultaneous reforms, however, that it is almost impossible to identify its independent impact. The Danish case thereby provides an interesting example of how AEIs may be used to serve purposes other than purely supporting academic excellence, and of the various difficulties entailed in attempting to insert a radically new funding element into a fairly conservative system.

In this chapter, the UNIK initiative, which ran from 2009 to 2013, allocating a total budget of 480 million DKK (73 million USD), is described, and its connection with various governance reforms is discussed. First, an overview of the Danish HE system is presented, and the policy context of the AEI is described in some detail. Next, the design and implementation of the AEI itself is introduced and its impacts discussed. The chapter concludes with a summary of key insights from the Danish case and unresolved questions.

The Danish HE System—from Hesitation to Pacesetting

The Danish HE system consists of eight public universities,[1] which together enroll approximately 20 percent of the youth cohort each year. Public research is almost exclusively done at universities, and Danish universities are funded through a mix of government grants for education (the so-called taximeter scheme, which awards funds based on student activity), block funding (basic funding for research), and competitive funds, normally allocated through research foundations. The main source of income, therefore, is educational activity. As demonstrated in table 7.1, Danish universities vary substantially in size (both in staff and student numbers). The smallest institutions are monofaculty universities—for example, the IT University of Copenhagen, with

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Table 7.1
Overview of institutional characteristics of Danish universities

Name	University of Southern Denmark	Technical University of Denmark	Copenhagen Business School	IT University of Copenhagen	Aalborg University	Aarhus University	University of Copenhagen	Roskilde University
Student population	29,700	11,200	19,700	2,500	20,000	38,000	37,500	8,000
Year of foundation	1966	1829	1917	1999	1974	1928	1479	1972
Staff	3,700	5,800	1,500	700	3,800	8,000	9,500	950
Revenue (approx.)	499 mil. USD	883 million USD	213 million USD	54 million USD	473 million USD	1 billion USD	1.5 billion USD	123 million USD
Model	Comprehensive	Monofaculty (tech)	Monofaculty (business)	Monofaculty (IT)	Comprehensive	Comprehensive	Comprehensive	Comprehensive

Note: Data collected from institutional websites (https://www.sdu.dk/en; https://www.dtu.dk/english; https://www.cbs.dk/en; https://en.itu.dk; etc.).

approximately 700 staff and 2,500 students, and Copenhagen Business School, with approximately 1,700 staff and 20,000 students—whereas the largest are the comprehensive universities, such as Aarhus University, which has approximately 8,000 staff and 38,000 students.

The current university landscape, however, is a relatively recent construction, brought about by a wave of reforms that swept through the system starting in the early 2000s, and when speaking of AEIs in Denmark, it is impossible to avoid this recent history of HE reform.

Research Policy in Denmark

Traditionally, research policy in Denmark has put a strong emphasis on highly institutionalized academic ideas and an overall notion of universities as classic knowledge-production institutions. In general, it can be argued that Danish research policy has enjoyed a high degree of continuity, particularly in the twentieth century. Although there have been several reforms of the system since the late 1960s, these were characterized by strong adherence to the norms of autonomy and self-regulation. Approaching the turn of the millennium, however, a shift toward a more entrepreneurial vision of universities began to appear, and with this vision came a far more interventionist research and university policy (Aagaard and Mejlgaard 2012; Degn 2015).

Due to this traditional "arm's-length" principle, the Scandinavian countries are sometimes described as hesitant reformers or "laggers" with regard to the reforms of their HE sectors (Bleiklie et al. 2011; Christensen and Lægreid 2017). However, as the following description demonstrates, there is very little hesitation left in the Danish HE system. Since the early 2000s, the HE sector has been continually and comprehensively reformed in terms of its legal status, transitioning from state-owned to self-owning institutions; internal management structures, transitioning from collegial to professional management structures; financing, transitioning from primarily funded by basic funding to being increasingly dependent on competitive funding from a mix of public and private funders; and in terms of size, transitioning from a broad system, with a number of governmental research institutions and several monofaculty institutions, in addition to the comprehensive (classical) universities, to a more stringent system with eight universities that varied considerably in both size and scope (Aagaard 2017; Aagaard, Hansen, and Rasmussen 2016; Degn 2015; Degn and Sørensen, 2015).

These transformations were initiated by the 2003 University Reform, which has been described as a major break with the Nordic arm's-length tradition within research and university policy (Degn and Sørensen 2015; Gornitzka et al. 2004). The university reform was primarily driven by ideas of efficiency and accountability (Degn 2015), and the main aim was to create more

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autonomous institutions, with the capacity to act strategically in an increasingly competitive environment.

Over the same period, this competitive environment was strengthened through a number of transformations of the public research funding system. The Danish research funding system was focused for years on funding large-scale excellence initiatives, such as CoE through the DNRF, albeit only distributing a limited amount relative to other funding streams (approximately 2 percent).[2] At the same time as the 2003 University Reform, the funding council system was also reformed, and a new Strategic Research Council was established alongside the more traditional Independent Research Council. The amount of funding distributed through this new council rose substantially over the following years, whereas the amount of funding distributed through the Independent Research Council increased only marginally in the same period (Aagaard and Ravn 2012). In general, this reform and other initiatives in the research funding system have focused on strategic research, competitive funding, and fewer, larger projects (for a more in-depth analysis and overview of the Danish funding reforms, see Aagaard 2017).

The Globalization Strategy and Institutional Mergers

In the wake of these reforms, a stronger focus on both relevance and excellence grew in the research policy discussions in Denmark. Relevance was broadly understood as the need for the universities to collaborate better with industry and business and to focus more explicitly on innovation and strategic collaboration. Excellence, on the other hand, was conceptualized as being world-class and internationally competitive, even if it was still often linked to relevance, in that research was understood to be the basis of welfare and prosperity.

In 2006, this focus on relevance and excellence manifested itself when the Globalization Council (consisting of various ministers, unions, interest groups, and other stakeholders) presented a report laying out the visions for Denmark in the global (knowledge) economy: the Globalization Strategy. The Globalization Strategy is not so much a strategy as it is a reform program that aimed at strengthening the Danish educational, research, and innovation systems, which were facing new challenges as a consequence of globalization. The HE sector played a substantial role in this vision, which detailed new initiatives aiming at these parts of universities. Two major reform elements should be emphasized here, as they are closely connected to the AEI that is the focus of this chapter. First of all, a substantial, but sometimes overlooked, reform entailed in the Globalization Strategy was PhD reform, which was enacted in 2006[3] and aimed at markedly increasing the number of PhD students in Danish universities. The aim was stated as follows: "The number of PhD fellowships and corporate PhDs must be doubled," and it was specified that "[t]he

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increase should particularly take place within natural science, technical science, IT, and health sciences" (Danish Government, 2006). This was implemented as a significant increase in block-funding to universities earmarked for PhD fellowships, resulting in a sharp increase at the junior level in the following years—thus implicitly strengthening the research capacity and excellence of the institutions, albeit with no structural changes. The PhD reform, however, was also directed at supporting and fortifying the links to business and industry, by emphasizing that PhDs should transition into the private and public labor markets to a much greater extent than before.

Second, the university reform and initiatives presented in the Globalization Strategy paved the way for a large-scale merger process that was introduced in 2006 and implemented in 2007. Mergers were not a part of the Globalization Strategy, and as such, they were not seen as part of strengthening Danish education in the global competition, but they had been on the policy agenda for years. The specific process was the result of failed proposals for smaller-scale mergers (Aagaard et al. 2016). The minister at the time opted for a broad-scale process including the entire institutional field, and the underlying rationale seemed to be "Bigger is better"; this agenda had been pushed forward since before the 2003 University Reform, not only by national actors, but also by the Organisation for Economic Co-operation and Development (OECD) (Aagaard, Hansen, and Rasmussen 2016; OECD 2005). The merger process can also be seen as a part of a larger centralization process or "merger competition" in the Danish public sector, following other large-scale mergers in various parts of the public sector (municipalities, the health sector, public education, and others) (Hansen 2012). The merger process involved the integration of Governmental Research Institutes (GRIs) into the university sector and interuniversity mergers.

The process was largely framed as a voluntary process of integration, but it was also presented as a "cost-neutral" process (i.e., with no additional funding attached), which led to a mixed reception in the sector (Aagaard et al. 2016). In the initial phase of the process, the institutions were invited to find "dancing partners." This process was quite complicated, and several institutions ended up dancing alone, but after months of deliberation, a new "university landscape" was presented by the minister of higher education and science. The merger process affected institutions differently, depending on the number of merged units, ranging from almost-unchanged institutions like Copenhagen Business School and the IT University to the extreme case of Aarhus University, which merged with the Aarhus Business School, the Danish University of Education, the Institute of Business and Technology, and several GRIs. The reception or reactions to the mergers were also varied across the sector; the institutions that were most radically changed experienced the most resistance

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and complications, where the smaller and less affected institutions had more positive or neutral experiences.

There is little doubt that these government initiatives; the merger process, the PhD reform, and the 2003 University Reform, together boosted ideas of research excellence, institutional efficiency, strategic capacity, and not least, relevance in the form of innovation and significantly increased collaboration with business and industry in the 2000s.

However, it is also important to emphasize that this era of a more interventionist research policy also was a time of relative success for the Danish research system. As demonstrated by Aagaard and Schneider (2016), and illustrated in figure 7.1, the Danish research performance had been rising since the late 1980s and was on an upward trajectory at the time of the reforms.

The problem definition promoted in the Globalization Strategy was thereby one that emphasized the strong starting point but identified problem areas, such as the lack of rewards for high-quality research being built into the block

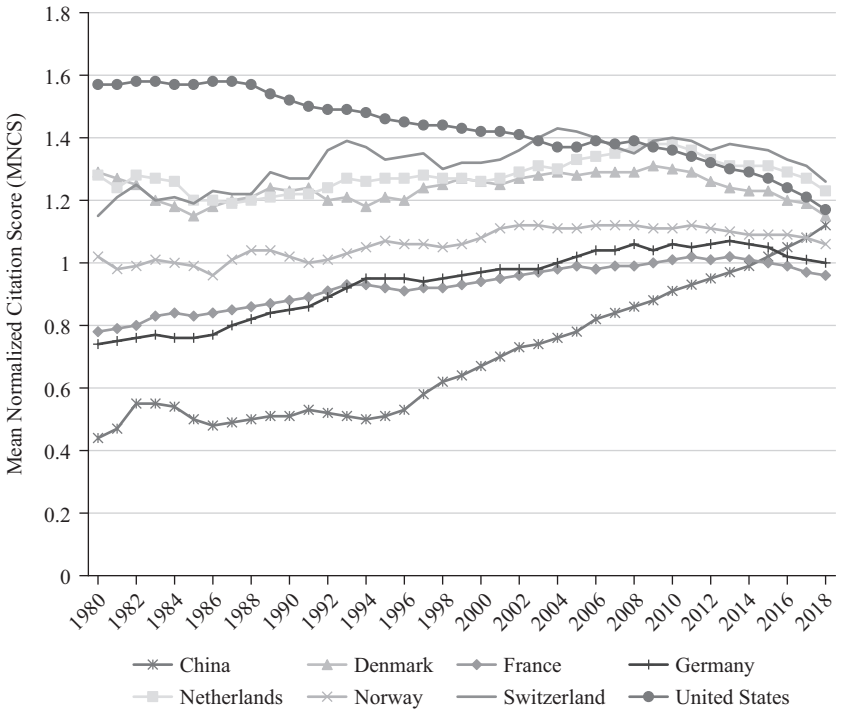

Figure 7.1
Research performance (measured as mean normalized citation score) of selected countries, from 1980–2020. *Source*: CI-WOS, CWTS, Leiden University, Netherlands.

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funding system, the lack of competition for funds, too little concentration of funding, and the lack of traditions for measuring and assessing research quality (Danish Government 2006).

The UNIK Initiative

One of the measures proposed to strengthen these problem areas was a new competitive research funding initiative, which was introduced as part of the Globalization Strategy: the UNIK (meaning "unique" in Danish) Initiative. UNIK was a competitive funding scheme aimed at funding large, cross-cutting research programs—to a large extent similar to the well-known CoE. The initiative was supposed to enable the overall vision of a world-class HE sector outlined in the Globalization Strategy, as well as to support the merger process. The novelty of the initiative, and where it represented an alternative to the existing funding schemes, was that it was directed at institutions—something that was seen as radically new in a Danish setting, where the focus for years had been on funding the best individuals and research groups.

UNIK was, as mentioned in the introduction to this chapter, the first of its kind in Denmark. It was an initiative explicitly aimed at advancing world-class research in universities and strengthening the institutional capacity of universities in the wake of the massive reforms described here. Enacted in 2007, UNIK ran from 2009–2013, and the allocation of funds for the initiative was unprecedented for Denmark: 480 million DKK (73 million USD) for the entire program, which allowed the government at the time to reach the goal of allocating 1 percent of gross domestic product to funding; a goal expressed in the Globalization Strategy as previously described.

The overall goal of the initiative was to promote "world-class research in Danish universities" (IRIS Group 2015, 17). This goal was interestingly formulated in terms of looking at the overall discussion of excellence. The goal is directed at research, not at universities. The initiative was conceived at a time where institutional rankings were on the rise, but in the goal description of the initiative, and in the Globalization Strategy, the institutional excellence (entailing more parameters) is downplayed in favor of research excellence. The minister of higher education, research, and innovation at the time of the initiative, however, did have an expressed interest in creating world-class universities—having one Danish university in the European top 10 (OECD 2014)—and UNIK was most likely also an element of the strategy toward fostering institutional excellence. However, this was never stated openly in the descriptions of the initiatives.

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In addition, there were other objectives underlying UNIK. The program was initiated in the wake of the merger process, which was driven forward by the idea of creating fewer and stronger research environments to be able to compete on the international stage. An underlying aim of UNIK was to support the merged universities in their integration processes by supporting collaboration internally and emphasizing interdisciplinarity (OECD 2014), even if this was not stated openly in the description of the initiative.

UNIK (and the Globalization Strategy more broadly) were also partially intended to remedy a situation brought about by the unexpected opposition to the reforms described here. As previously mentioned, a major policy aim of the governance reform of 2003 was to strengthen the capacity of the institutions to act strategically by empowering them and increasing their institutional autonomy. However, the competitive funding schemes, which were also strengthened in the same period, were designed to fund individuals rather than institutions, thereby taking the strategic capacity away from the overall institutional level. It was seen as difficult for the institutions to make strategic decisions regarding research, when the funding available was awarded to individuals, who could in essence take their money and leave. The mergers also further emphasized this need to strengthen the institutions and their overall management in order to avoid fragmentation within merged units.

The Design of the Initiative

In many ways, UNIK resembled other programs funding CoE. The main difference between UNIK and CoE was that UNIK aimed at empowering the universities' top management and inspiring them to develop strategic lines of high-quality research, rather than allowing the academic environments to apply "freely." This meant that applications for UNIK were to come from university management, who were to make strategic decisions on which research fields the particular university wanted to develop and identifying research areas that they found strategically important. After the program, this component was highlighted by UNIK universities as a positive feature of the process: the dialogue between university management and research environments ensured coherence between research strategy and UNIK applications. The funding was in principle allocated to the rector of the host institution, but it was specifically financing the selected units/CoE within the universities—the so-called UNIKs.

Application and Selection Processes

Only a restricted number of applications were allowed per institution (thirty-one in total, from all universities), in an attempt to force the university

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management to prioritize particular research areas and strategic positioning. In the call for applications for UNIK, it was specified that the government expected all universities to participate in the application round. In general, very few restrictions and requirements were specified in the call, allowing university management to make strategic decisions based on their own priorities and strengths rather than on thematic or disciplinary restrictions. It may be argued that the size of the potential grants imposed some limitations on the applicants; this point will be discussed in the conclusion of this chapter.

At the deadline, twenty-eight proposals had been submitted from all eight universities (Ministry of Higher Education and Science 2015). These proposals were then reviewed by a panel of experts, comprising ten professors from Scandinavia, Germany, Belgium, the Netherlands, and the UK. There were few "prescriptive elements" in the call, to "pave the way for pioneering, cross-disciplinarity and scientific breakthroughs" (Ministry of Higher Education and Science 2015), which meant that the selection criteria were mainly the quality and relevance of the proposals. The main criteria were their ability to support excellent research of the highest international standards, further international interaction and cooperation, and train and support young researchers.

After the initial reviews, the panel of experts engaged in dialogue with the applicants, and then a second review was conducted. The final selection of UNIKs was done by the minister for higher education and science, based on the recommendations of the expert panel. As a special feature, this panel of experts was charged with the initial review and recommendations, as well as continual follow-up, entailing a midway evaluation and a summative assessment at the end of the five-year program.

Results and Funding

Initially, the intention was to fund five to eight projects through UNIK, but in the end, only four UNIKs were funded in only three universities. The four UNIKs were

- MindLab at Aarhus University, focusing on interdisciplinary research on the mind
- Food, Fitness and Pharma for Health and Disease at the University of Copenhagen, focusing on interdisciplinary research into the prevention of lifestyle diseases
- Synthetic Biology at the University of Copenhagen, focusing on artificial biological systems
- Catalysis for Sustainable Energy at the Technical University of Denmark, which conducts research into the storage of renewable energy

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The universities that received funding through UNIK were, partially as a result of the merger process, the three largest institutions, which also made them the primary receivers of both basic and competitive funding. The UNIK funding came on top of this and thereby marginally vertically differentiated the Danish university system (see figure 7.2).

An interesting feature of the four UNIKs is that they all focus on interdisciplinary research. This was not a prerequisite in the call for applications and is something that has been notoriously difficult to get funding for through the existing system, which is much more focused on monodisciplinary research.

As previously mentioned, there were few strings attached to UNIK funding. The UNIKs were required to report on cost statements and submit progress reports, but otherwise, the primary monitoring was in the hands of the international panel of experts, which had also assessed the applications and been in dialogue with the applying institutions. The panel conducted annual visits to the UNIKs and provided a formative midway assessment and an end-of-program evaluation. In general, this monitoring strategy was seen as one of the more successful parts of the design. The panel of experts highlighted it as a very positive feature in their assessment and commended the government for choosing this strategy. As they stated in the final assessment report: "Peer reviewers are often not given the chance to follow selected research projects over their entire lifespan. In the case of UNIK, the expert panel has been continuously involved and engaged. This has not only allowed for new professional

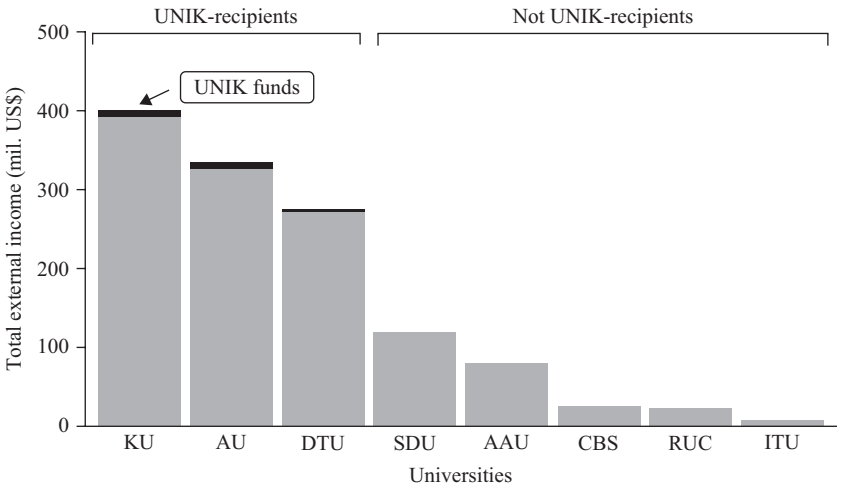

Figure 7.2
Total external income (income for research beyond basic funding) for all Danish universities in 2009 (the first year of UNIK). *Source*: Ministry of Higher Education and Science.

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friendships to arise but seems also to have been a beneficial guiding tool for the UNIK's, helping them to succeed with their missions" (Ministry of Higher Education and Science 2015).

The Impact of the UNIK Initiative

The final assessment of UNIK, published by the panel of experts in January 2015, some two years after the completion of the program, was quite clear in its verdict: there seems to be no doubt that UNIKs have been successful in terms of reaching the goal of research excellence, establishing new international collaborations, and attracting high-profile researchers from abroad. In particular, the experts highlighted that UNIKs had succeeded in creating environments that produced excellent cross-disciplinary results, increased the overall internationalization of the institutions (by increasing mobility and strengthening their international reputation), and helped support and advance the recruitment of young researchers (i.e., strengthening the growth layer of the host institutions).

However, the expert panel also mentioned in their evaluation that the UNIK initiative had achieved the goal of strengthening the strategic capacity of the institutions by laying "the ground for the professionalization and advancement of the research administrations at the host universities, leading the initiatives to be optimal platforms for strategic planning and the attraction of third-party funding" (Ministry of Higher Education and Science 2015).

In addition to this assessment from the panel of experts, a second evaluation was published in 2015, which focused on the added value of the specific instrument. The aim of this evaluation was to assess whether "UNIK was unique" (IRIS Group 2015) or whether similar results could have been obtained through other existing research-funding measures.

This second report echoes the conclusions of the expert panel: effects such as the number of high-level publications, PhDs and postdocs, and international scholars employed are beyond question and speak to the success of the UNIK initiative for the individual institutions. A number of derived effects are also highlighted in this evaluation report, such as a limited number of new educational programs and research communication activities. This indicates a key element of this initiative—namely, that it was almost exclusively focused on research, and the impact in terms of education was a side effect. It is naturally difficult to assess any longer-term impact in relation to education but, given the limited number of UNIK programs and focus on recruiting postdocs, who in Denmark mostly do not have teaching obligations, the expected impact must be said to be limited.

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Organizational Impact

Beyond this, the second evaluation also pointed out that some of the effects achieved could have been obtained through other measures (e.g., organizational change, the allocation of additional funding to a specific research area, and the strengthening of research excellence), while some effects were directly related to the specificities of UNIK (e.g., strengthening the university management steering capacity, advancing experimental interdisciplinary research and research collaboration) (IRIS Group 2015). According to the second evaluation, UNIK enabled university managers to engage in more active and strategic dialogue with academic leaders and researchers, and to some extent "strengthened the university management's capabilities and visibility vis-à-vis the research environments. As described by one interviewee: 'UNIK made it possible for the university management to show that it was ambitious and capable.'" (IRIS Group 2015). Of course, this should be seen in relation to the opposing forces of the reforms that the UNIK initiative is nested within. As mentioned, the reforms of the 2000s worked to strengthen the autonomy of university management and the financial autonomy of researchers. The UNIK initiative was meant to counteract this by empowering university managers to make strategic decisions on research directions and priorities.

A particularly interesting conclusion drawn in the second evaluation was that for the universities undergoing mergers at the time, UNIKs had had a positive effect on the integration of various research groups and was in some cases actively used to promote collaboration across merged units. This was particularly so in the case of the University of Copenhagen, and to some extent Aarhus University, which seems natural since these were the institutions most radically affected by mergers.

There is no doubt that in the short term, the UNIKs have had a positive impact on the individual institutions, or at least on the research environments chosen as UNIKs. A key concern, however, of the expert panel and the follow-up evaluation was the time frame of the initiative and the sustainability of UNIKs. As mentioned earlier, the funding was limited to five years (from 2009–2013), a time frame that was criticized by the universities and by the evaluators of the initiatives. As mentioned in the expert panel's final report: "From an organizational perspective, the funding period of five years is a weak point of UNIK. Establishing new collaborations across disciplines is a time-consuming process that is very fragile without the certainty of an economic basis. Certainly, the new interdisciplinary collaborations could have benefited a lot from more time to establish a common ground and to develop the synergies even further under the "protection" of a UNIK grant" (Ministry of Higher Education and Science 2015).

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Sustainability and the UNIKs Today

Sustainability was a major concern in the final assessment of the international panel of experts, and none of the UNIKs exist in their original form today, eight years after the conclusion of the program. This is perhaps not surprising, given the dynamics of the fields of research and the research system in general, and when exploring the websites of the funded institutions, it becomes clear that the UNIKs have been integrated to some extent into new CoE or other types of research groups, thus building on the strengths and results obtained through the program.

One example of this is the Food, Fitness and Pharma for Health and Disease program at the University of Copenhagen. In 2014, the university established a strategic platform, the Strategic Platform for Lifestyle, Obesity and Metabolic Research, precisely to "build on the success from the UNIK 'Food, Fitness & Pharma' initiative, and to strengthen the internal collaboration and shared identity within the research areas across the [University of Copenhagen]" (University of Copenhagen 2018). This strategic platform was charged with providing general support for researchers and the research field, supporting the network building and career paths of young researchers, assisting in fundraising, communication, and other tasks. This was done through activities such as conferences to bring researchers together, strategic deliberations, and the construction of work programs to develop the field of research. According to the final report, the strategic platform succeeded in attracting 158 million DKK (24 million USD) in external funding over its four years of existence (University of Copenhagen 2018).

Another example is the UNIK MindLab at Aarhus University. MindLab was built on an existing CoE—namely, the Center of Functionally Integrative Neuroscience (CFIN) at Aarhus University—and aimed to connect the activities there with other units and environments at the university. After the grant period ended in 2014, however, the future of MindLab was uncertain, as was noted in the annual joint report from CFIN and MindLab: "The UNIK grant period ends on a long and sour note in terms of the embedding of MINDLab's successful activities, as we still lack a sustainable funding model to secure key scientists and running costs associated with our neuro-imaging facility" (CFIN 2015). In the following years, the two centers were reorganized and included in a more integrated setup within the existing university structure, and today, it is an integrated part of the Department of Clinical Medicine at Aarhus University, where the research groups continue to conduct interdisciplinary research with many collaborators across the university.

But then, what about the unsuccessful applicants? As already mentioned, only four UNIKs were funded, even though the expressed aim had been

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between five and eight. In addition, the four UNIKs were hosted by only three institutions, meaning that five other universities were not successful in the application process. However, they had been through the process of constructing an application, thereby making the strategic priorities and deliberations that were also part of the aim of the initiative.

The second evaluation zoomed in on exactly this, concluding that the non-UNIK-hosting universities also benefited from being part of the application round, such as by identifying research fields that were then embedded into the research strategy of the university. The nonbeneficiaries, however, did not really see this as a specific outcome of the application process.

All in all, it is clear that the UNIKs were a success for the beneficiaries, in the short term and the slightly longer term, even despite the relatively short time span of the initiative. For the nonbeneficiaries, however, the impact seems to have been marginal.

The Impact on the Danish Research System

As described in the previous section, there seems to be little doubt that in the short term, the UNIK initiative had at least a marginal, positive impact on specific environments that were chosen as UNIKs.

Looking at the Danish national research system more broadly, it is more questionable whether the UNIK initiative has had a major (or even a minor) impact. In terms of advancing world-class research in universities and strengthening the institutional capacity of universities, which were the expressed goal of the initiative, it seems obvious that if we look at the individual institutions that received a UNIK grant, both aims have been achieved. But as discussed previously, there is also some evidence pointing toward a smaller impact on the broader Danish research system. As pointed out by Aagaard and de Boer (2017), the UNIK initiative was—despite its size—fairly limited seen in relation to the amount of funding otherwise distributed in the research funding system. In reality, UNIK amounted to only 0.5 percent of the total amount of public funding for research in the same period of time (Aagaard and de Boer 2017). The initiative was only one tool in a very large toolbox used at the time, and the relative impact of this particular tool can be said to have been limited. This limited impact at the system level is most likely due to a number of factors, only a few of which are discussed here.

First, in addition to being limited in time span, UNIK was never repeated. Aagaard and de Boer (2017) discuss a number of possible reasons for the termination of a somewhat successful funding program, including the lack of ownership and the lack of support from the sector, both of which are discussed

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next. But whatever the reasons for the discontinuation of the program, the fact remains that the excellence initiative stands out as a "one-off experiment" (Aagaard and de Boer 2017), thereby not incentivizing or enabling the university management to continue strategic prioritization.

Second, the initiative ended up benefiting the three largest universities, which already received up to two-thirds of the available public funding—block funding and competitive funding. This skewed distribution thereby supported and enhanced an already differentiated system, where the large universities attracted much more funding than the smaller ones. As figure 7.3 indicates, this skewed distribution has not decreased since the time of UNIK.

While this skewed distribution of funding in the UNIK program is not by definition a negative feature of the program, it may have led to a lack of support from the HE system, as Aagaard and de Boer (2017) pointed out. Universities Denmark, the association for all universities, never gave its full support to the initiative, perhaps because it was seen as another way of maintaining vertical differentiation in the system, which is seen by the smaller universities as unfortunate and to some extent unjust. Similarly, there was some criticism that the design of the instrument favored specific types of research (i.e., the so-called hard sciences) due to its size. This was believed to put certain institutions (mainly the smaller, regional universities) at a disadvantage because of their primary focus or existing strength within the social sciences or humanities.

A final hypothesis as to why the UNIK initiative was never repeated is that it was deemed unnecessary. As mentioned in the introduction of this chapter,

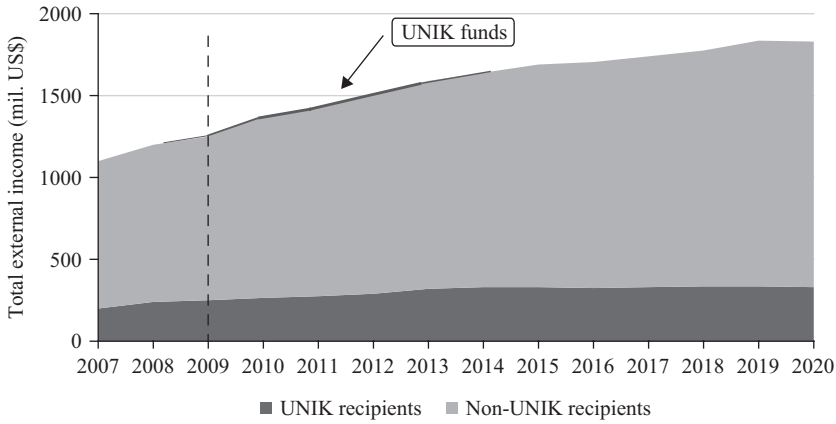

Figure 7.3
Total external income (income for research beyond basic funding) of all Danish universities from 2007–2020. *Source*: Ministry of Higher Education and Science.

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the Danish research system overall is doing quite well in international comparisons, and perhaps also somewhat better than it was made to look in the Globalization Strategy of 2006. UNIK can be said to have slightly boosted this success—at least for the selected areas—but the marginal impact can be explained by the already strong position of the research system.

However, a few broader points should also be mentioned. The first, and perhaps also most intangible, impact of the UNIK program could be related to the success of the interdisciplinary research environments that were established through the program. Interdisciplinarity has, as described earlier, been notoriously difficult to obtain funding for through the traditional (and somewhat conservative) research funding system. After UNIK, it seems that the focus on—and funding for—interdisciplinary research has increased, within both the research council system and the universities themselves. This increased acceptance of and focus on interdisciplinarity can probably not be ascribed to the UNIK program, but it seems that at least it has become a strategic priority and focus for Danish universities. Some universities have been active in this regard, such as Aarhus University (a UNIK recipient), which used interdisciplinarity as a key focus area in the postmerger integration process.

The second point relates to the strengthened institutional excellence. As mentioned in the introduction, both quality (excellence) and relevance were the driving ideas behind most reforms in the Danish HE sector. In this chapter, the focus has been on the UNIK program, and thereby the excellence side of policy development, but there is no doubt that the concept of relevance, as well as policy drives toward innovation and collaboration, have had a much stronger impact and been more visible in most of the reforms. In general, the UNIK initiative was an element in the strategy toward fostering institutional excellence, even though this was seldom an explicit aim—even if the minister of higher education, research, and innovation at the time of the initiative had an expressed goal of having one Danish university in the European top 10 (OECD 2014). It should be mentioned that this goal was reached: in 2021, the University of Copenhagen ranked as number 7 in Europe (number 30 globally) in the Shanghai-ranking, but it is highly unlikely that this position is related to the UNIK program, given the marginal impact of the program described here. The rise in rankings and general impression of high research performance by Danish researchers could be seen as a result of the prolonged attention to research excellence, understood as high-impact publications and success in attracting prestigious grants, in the Danish HE system.

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A Unique Initiative?

There have several attempts to evaluate and analyze the success of the UNIK initiative, such as Aagaard and de Boer (2017) and the chapter on the Danish case in the OECD publication *Promoting Research Excellence: New Approaches to Funding* (OECD 2014). The conclusion of these analyses—and this chapter—is that despite its success in achieving its short-term goals of supporting research excellence, almost a decade after the program has ended, it seems to have been of minor importance in the larger picture for several reasons. Some of these reasons have already been discussed throughout this chapter, but a few remaining points are addressed here in this final discussion.

One reason for the seeming lack of impact of UNIK is arguably that the program was introduced as one piece in a large puzzle—the major governance and funding reforms, the Globalization Strategy, and the mergers—which together resulted in a radically transformed university system. UNIK was introduced, partially, to alleviate some internal inconsistencies between these major initiatives, but given its limited time span and the relatively low amount of funding, any major or lasting systemic change may have been too much to expect.

Second, the program was implemented without strong supporters or strong opponents. Aagaard and de Boer (2017) point out that since the program was never fully integrated into the existing funding setup (i.e., strongly tied to the research councils or the like), no one claimed ownership of the program and thereby supported a continuation. This was probably also influenced by the fact that UNIK was funded by additional funds, allocated through the Globalization Strategy. A continuation of the initiative would likely require a reallocation of funds from inside the public research funding system, and thereby from such elements as the research councils or from basic funding.

Third, even if the underlying ambition of fostering world-class universities in Denmark can be said to have been present in all governments since the turn of the millennium, the willingness to intervene directly in the research system has dwindled markedly since the 2000s and early 2010s. Even though a number of reforms have occurred since then, these have targeted other areas of the HE system, most notably the educational part of universities (e.g., regulating uptake in HE programs, student progression, or more recently, the geographic location of study places). After a decade of massive reform, the research and HE sectors were in many respects strengthened, not least due to the substantial increase in resources allocated as part of the Globalization Strategy, but also characterized by some degree of fatigue. Particularly, the 2003 University Reform and the merger process were met with much criticism from the

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sector, and the "wounds" from these processes are to some extent not fully healed even today.

This chapter described the context in which UNIK was introduced, the specificities of the instrument, and its implications. In the final summary that follows, I review the key findings of the case study and discuss the strengths and weaknesses of UNIK.

Conclusion—Strengths and Weaknesses of the UNIK Initiative

First, a key characteristic of the UNIK initiative was that it was designed to alleviate or counteract oppositional features in the major reforms of the time. As demonstrated in this chapter, it is impossible to separate the initiative from its reform context, and this is most likely also a substantial part of the explanation for its discontinuation. To put it crudely, the UNIK initiative was drowned in reforms, and thereby it stands out as a program with only marginal impact.

Second, the UNIK program aimed to strengthen institutional strategic capacity, thereby filling a gap in the existing Danish public funding system. The program targeted university management and sought to empower and strengthen its ability and capacity to make strategic decisions about the research priorities of the institutions—an aim that was, and is, unique. Based on the analysis in this chapter, this particular characteristic may be seen as the biggest strength and one of the major weaknesses of the initiative. It can be regarded as a strength because it actually allowed the universities to be bold in their prioritizations, it urged them to explore their own research potential, and it encouraged interdisciplinarity (maybe unintentionally).

A third key finding is that even if the program stands out as a singular experiment in the Danish context, UNIK was, at least locally, a success in terms of reaching its stated goals of supporting research excellence and strengthening institutional strategic capacity. In particular, UNIKs were very successful in building up interdisciplinary research fields, which was a side effect of the program.

Finally, UNIKs seem to have survived beyond the funding period, although in altered forms. As previously mentioned, the program has not had a major impact on a broader scale, but the UNIKs that were funded have individually been very successful. In general, it can be argued that the four UNIKs and their ability to conduct high-quality, interdisciplinary research is the most significant strength and success of the initiative.

There are, however, also a number of weaknesses to the initiative. First, the allocation of funding through UNIK reinforced an already differentiated

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system. By awarding UNIKs to the three largest and most well-funded universities, the program further skewed the allocation of funds (see figures 7.1 and 7.2) and thereby decreased any incentive that Universities Denmark and the broader sector may have had to support it. This differentiated system is perhaps not in itself a negative effect or characteristic of the Danish system. Many other national HE systems—many examples of which are given in this book—are differentiated, with a clear top tier and a number of lower-tier institutions. However, in a small and very egalitarian system such as the Danish one, the uneven distribution of funding between the eight institutions is regularly discussed, and there is a general perception (particularly among the smaller universities) that the distribution is unjust. An initiative such as UNIK, which further reinforced this differentiation, has little chance of gaining widespread support within the system.

Second, the administration and allocation of the funding scheme was decoupled from the existing system, further limiting the sense of ownership and support for the initiative. The funding was a singular allocation, and any repetition of the program would have entailed an internal redistribution in the public funding system, which may have weakened support for the program. The strengthening of the institutional strategic capacity, which has been mentioned as a potential strength, may also be seen as a weakness, as it may have led to the general lack of support for the continuation of the program. As highlighted by Aagaard and de Boer (2017), this particular design aligned perfectly with the NPM logic that has been so influential in the reform program described in this chapter, but it also collided with the institutional logics that dominated the institutions and the academic environment. As mentioned in the opening sections of this chapter, Denmark has seen a long tradition of policy continuity and a strong adherence to academic norms and logic in research policy, which might explain the strong resistance toward the NPM inspired reforms of the 2000s.

Finally, the limited time span is a significant weakness of the initiative. The expert panel and the UNIKs themselves highlight this as a weakness, and it may be a weakness that potentially counteracts the most significant strength of the program—namely, its ability to support interdisciplinarity. As mentioned, interdisciplinarity is notoriously difficult to find funding for, and it is difficult to build up solid and impactful interdisciplinary research areas. It may be argued that a five-year program is too limited even for a monodisciplinary CoE, but for interdisciplinary ones, five years seem exceptionally challenging.

In this way, the UNIK initiative has proved to be unique. Primarily, it has been unique in that it has never been repeated, even if it was stated in the Globalization Strategy that it was supposed to be repeated on an annual basis.

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Further, it is unique since it represents an unprecedented experiment in a highly conservative system. The aim of strengthening the institutions, as opposed to the researchers, can be said to represent a very different definition of "excellence" than the one dominating the system—namely, a notion of institutional excellence versus researcher excellence. The UNIK experience in this way illustrates how difficult it can be to change such institutionalized ideas, even without direct opposition.

Notes

1. Traditionally, Danish HE was organized in a two-tier, binary system, with universities providing academic education (at the bachelor's and master's levels) and professional- and vocational-oriented education provided by other HE institutions. In 2008, a number of the smaller units in the nonuniversity sector were merged into University Colleges, thus creating a more centralized system of HE in Denmark. Even though the University Colleges have the right and an obligation to conduct research, they are not included in the analysis since they have not been a part of the same initiatives as the universities.

2. Such initiatives, however, do not fall under the definition of AEIs put forth in this book, as they are an integrated part of the research-funding system, not directly allocated by the state, and not an additional injection of funding by the national government to a selected number of universities.

3. Intake of PhD fellows had been strengthened already in 2004, but the Globalization Strategy significantly boosted this, more than doubling the number of PhD fellows over the following years (Stage and Aagaard, 2019).

References

Aagaard, Kaare. 2017. The evolution of a national research funding system: Transformative change through layering and displacement. *Minerva 55* (3): 279–297.

Aagaard, Kaare, and Harry de Boer. 2017. The Danish UNIK initiative: An NPM-inspired mechanism to steer higher education. In *Policy Analysis of Structural Reforms in Higher Education*, 141–159. Cham, Switzerland: Palgrave Macmillan.

Aagaard, Kaare, Hanne Foss Hansen, and Jørgen Gulddahl Rasmussen. 2016. Mergers in Danish higher education: An overview over the changing landscape. In *Mergers in Higher Education*: *The Experience from Northern Europe*, edited by Rómulo Pinheiro, Lars Geschwind, and Timo Aarrevaara, 73–88. London: Springer.

Aagaard, Kaare, and Niels Mejlgaard, ed. 2012. *Dansk Forskningspolitik efter artusindskiftet*. Aarhus, Denmark: Aarhus Universitetsforlag (in Danish).

Aagaard, Kaare, and Jesper W. Schneider. 2016. Research funding and national academic performance: Examination of a Danish success story. *Science and Public Policy* 43 (4): 518–531.

Aagaard, Kaare, and Tina Ravn. 2012. Forskningsrådssystemet: Tilføjelser og forskydninger. In *Dansk forskningspolitik efter årtusindskiftet*, edited by Kaare Aagaard and Niels Mejlgaard, 159–194. Aarhus, Denmark: Aarhus Universitetsforlag (in Danish).

Aksnes, Dag W., M. Benner, S. Brorstad Borlaug, H. Foss Hansen, E. Kallerud, E. Kristiansen, et al. 2012. *Centres of Excellence in the Nordic Countries: A Comparative Study of Research Excellence Policy and Excellence Centre Schemes in Denmark, Finland, Norway and Sweden*. Oslo: Nordic Institute for Studies in Innovation, Research, and Education.

Bleiklie, I. Ivan, Jürgen Enders, Benedetto Lepori, and Christine Musselin. 2011. New public management, network governance and the university as a changing professional organization.

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In *The Ashgate Research Companion to New Public Management*, edited by Tom Christensen and Per Laegreid. Burlington, UK: Ashgate.

Center of Functionally Integrative Neuroscience (CFIN). 2015. *Center of Functionally Integrative Neuroscience & MindLab Annual Report 2014*. https://cfin.au.dk/fileadmin/cfin/CFIN_Annual_Reports/CFIN-MINDLab_Annual_Report_2014_lowres.pdf.

Christensen, Tom, and Per Lægreid. 2017. *Transcending New Public Management*: London: Taylor & Francis.

Danish Government. 2006. *Fremgang, fornyelse og tryghed—Strategi for Danmark i den globale økonomi*. Copenhagen (in Danish).

Danish Government. 2015. *Nye Mål—Regeringsgrundlag*. Copenhagen (in Danish).

Degn, Lise. 2015. Translating governance ideas in Danish higher education. *Higher Education Policy* 28 (3): 295–313.

Degn, Lise, and Mads P. Sørensen. 2015. From collegial governance to conduct of conduct: Danish universities set free in the service of the state. *Higher Education* 69 (6): 931–946.

Gornitzka, Åse, Bjørn Stensaker, Jens-Christian Smeby, and Harry De Boer. 2004. Contract arrangements in the Nordic countries—solving the efficiency/effectiveness dilemma? *Higher Education in Europe* 29 (1): 87–101.

Hansen, Hanne. 2012. Fusionsprocesserne. Frivillighed under tvang. In *I Dansk forskningspolitik efter årtusindskiftet*, edited by Kaare Aagaard and Niels Mejlgaard, 195–227. Aarhus, Denmark: Aarhus Universitetsforlag (in Danish).

IRIS Group. 2015. *Was UNIK Unique? Evaluation of Effects from the Danish Research Excellence Initiative UNIK*. https://irisgroup.dk/wp-content/uploads/2018/03/UNIK-evaluation-of-effects-Final-1.pdf.

Ministry of Higher Education and Science. 2015. *Annual Report 2014 and Final Evaluation from the UNIK Expert Panel*. Copenhagen: Ministry of Higher Education and Science.

Öquist, Gunnar, and Mats Benner. 2012. *Fostering Breakthrough Research: A Comparative Study*. Stockholm: Kungl vetenskapsakademien.

Organisation for Economic Co-operation and Development (OECD). 2005. *Reviews of National Policies for Education: University Education in Denmark 2005*. Paris: OECD Publishing.

Organisation for Economic Co-operation and Development (OECD). 2014. *Promoting Research Excellence: New Approaches to Funding*. Paris: OECD Publishing.

Stage, Andreas Kjær, and Kaare Aagaard. 2019. Danish universities under transformation: Developments in staff categories as indicator of organizational change. *Higher Education* 78 (4): 629–652.

University of Copenhagen. 2018. *Final Report UCPH LOM 2017–2018—Last Annual Report and Executive Summary*. Copenhagen.

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8

Academic Excellence à la Française: Between Excellence and Equality

Andrée Sursock

Historical and Cultural Context

Introduction

French universities were created in 1968. It is with this stark statement that many university presidents narrate the history of universities in France. What happened between 1150 (the birthdate of the University of Paris) and 1968 is an 818-year history of increasingly weakened universities, culminating in their closure during the French Revolution and their subsequent reopening as faculties. Conceived by Napoléon Bonaparte as a single institution centrally managed by the Ministry in Paris, 1808 saw the birth of the imperial university, with its numerous disciplinary faculties dotting the country. The 1968 Act (*Loi Faure*) attempted to break the power of faculties by reinstating universities. However, by 2009, the French higher education (HE) system had become fragmented across three major types of institutions: universities (with only a few that were comprehensive), the selective and specialized *grandes écoles* and numerous national research organizations (NROs). This fragmentation resulted in the lack of visibility of French research in the international rankings.[1]

This chapter focuses on the French academic excellence initiative (AEI), which was a response to this lack of visibility. It shows how the concept of excellence shifted along three dimensions during a ten-year period: from focusing on individual universities to encompassing regional clusters; from a focus on research strength as a central criterion to examining other criteria, including the governance structures; and from concentrating funding on a select few institutions to spreading it more widely. After presenting French HE and a discussion of the concept of excellence, part 2 of this chapter presents the AEI, part 3 explores its impact, and part 4 concludes with an assessment of its strengths and weaknesses.

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The French National HE System

In the recent past, the 1968 Act was the first significant attempt to reform the French imperial university. In response to the student movement, the legislation broke down the power of the faculties by merging them and reestablished universities based on the principles of autonomy, shared governance, and a modicum of multidisciplinarity. Starting in the 1980s, a renewed focus on the university sought to strengthen the institutions. This culminated in 2009 in a context where funding concentration in HE became one instrument for the development of competitive European and national knowledge-based economies. The German *Exzellenzinitiative* provided the Nicolas Sarkozy government with the inspiration for launching a bipartisan AEI.

By then, the fragmentation of the French HE system had endured and hardened. Not only were most universities fragmented along broad disciplinary lines, but there had been an uneasy hierarchical coexistence of the university system alongside the more selective *grandes écoles* and the NROs (Chatelain et al. 2014; Musselin 2001; Sursock 2014).

Recognizing that the structure of the HE system worked against the international recognition of French research, the AEI sought to place the universities at the center of the research system, with the *grandes écoles* and NROs as partners. The aim was to put France on a par with other countries and ensure the international competitiveness and attractiveness of French HE and research.

Today, the French HE system includes seventy-four public universities, a growing private sector (not involved in the AEI) and a large nonuniversity sector, of which some are the *grandes écoles*, responsible for training the professional elite. The public universities enroll the majority of the students. As opposed to the *grandes écoles*, the universities are expected to accept any holder of the secondary school leaving certificate. Underfunded and with constrained autonomy, the universities have been bearing the brunt of the expansion of the HE sector. The relationship between the *grandes écoles* and the universities is fraught with tensions as they compete for resources. The *écoles* receive about 50 percent more funding per student than the universities. The national élite are, for the most part, alumni of and advocates for the *grandes écoles*.

There are thirty-three NROs in France, of which the Centre National de la Recherche Scientifique (CNRS) is the largest. Since the 1960s, much effort has gone into bringing research into the universities and increasing the strategic capacity of universities. Today, nearly 95 percent of all CNRS researchers work in joint labs (*unités mixtes de recherche*—UMR), in which university and NRO researchers work side by side. The UMR are generally located in universities, and more rarely in the handful of *grandes écoles* that engage in research. The labs designation is akin to a quality label conferred on a lab by an NRO.

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Consequently, the lab is familiarly called by the name of its research organization rather than its university host and, until a few years ago, university researchers would sign publications using their lab affiliation rather than that of their university.

In 2003, the first Shanghai ranking, as it was known then, revealed that the international visibility of French research was not commensurate with its quality. This could be attributed to two factors: this ranking ignores publications signed by NROs, and most *grandes écoles* were not included since the scope of their research activities was too small. Since then, the universities, with the support from the government and the AEI, have been addressing the question of the affiliation on publications. Progress has been so slow, however, that the Ministry of Higher Education and Research in 2019 decided to compel all highly cited researchers, including NRO researchers, to use the name of the university hosting their joint labs as their affiliation.

Combating the fragmentation of HE has become a national goal. Clustering policies have been introduced to bring closer together the public universities, the *grandes écoles* and the NROs. There have been four discernable phases in this clustering process. The *Pôle de Recherche et d'Enseignement Supérieur* (PRES) in 2006 oversaw the creation of twenty-six consortia that pooled some resources and activities locally. *Opération Campus* came next (2008), aimed at selecting ten projects from neighboring universities. This program trialed a competitive application process and laid the foundation for building, across several neighboring universities, a successful experience that will prove useful when the *Initiative d'Excellence* program (IDEX) application becomes available (Harroche 2021, 62–65). A new policy in 2013 gave a choice of three types of groupings (from a loose association to a merger)—with more elaborate governance structures than the PRES—to coordinate local educational offers and contribute to the development of a territorial strategy for research and innovation. Much energy was lost in coming up with detailed governance agreements among a variety of actors, some of whom were uncomfortable with these shotgun marriages dictated by the Ministry. To the relief of many, this policy was abandoned in 2018 in favor of an ordinance that gave these consortia and the universities the possibility of experimenting with new forms of governance for a period of ten years. The 2018 Ordinance became the instrument by which *grandes écoles* could associate with universities without losing their legal status and their identity.

In sum, affiliation to a *grande école* or an NRO has been a mark of excellence that has fueled a strong sense of belonging. This militated against the universities and set France apart from all other countries considered in the international ranking schemes, which base their calculation on the performance

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of universities rather than NROs. The process of defragmenting the system has been in play for the past few decades, of which the AEI is the latest and most important installment (Gally 2018).

Excellence and Equality in French Political Culture

The AEI generated one fear—that the excellence of the universities outside the Paris region would be overshadowed by their Parisian counterparts—and faced two obstacles (Soulé 2010): the entrenched identification of staff to their *grandes écoles* and their NROs; and political opposition from some university quarters to an excellence policy that concentrates additional funding on the happy few in a context where universities are underfunded.

Furthermore, the AEI challenged the tryptic "*liberté, égalité, fraternité,*" which has lain at the heart of French political culture since the French Revolution. As discussed next, staff and student unions in some universities managed to block the changes required for the obtention of AEI funding based on these values. It is precisely the failure to deliver on these three values that makes them so important and brings about an uneasy coexistence of equality and excellence. Nevertheless, since *Opération Campus*, differentiation has been promoted by the state and culminated in the AEI (Harroche 2021, 62–65).

In short, any discussion of excellence in France is contentious and must distinguish between the ideal (equality and solidarity) and the reality (hierarchy and selectivity), as well as the uneasy tension between Paris and the provinces. This chapter addresses how successive governments have attempted to balance these polarizations while improving reality on the ground by policies that swing between excellence and equity.

The IDEX/ISITE Program

Time Periods and Main Goals

The Investment Program for the Future (*Programme d'Investissements d'Avenir*—PIA) was initiated in 2010 following a bipartisan proposal to provide funding of 57 billion EUR (67 billion USD) for strategic projects in key sectors, including HE. There have been four rounds of calls (PIA1, PIA2, etc.). The dates and amounts involved are as follows:

- PIA1: 2010, 35 billion EUR (41 billion USD)
- PIA2: 2014, 12 billion EUR (15 billion USD)
- PIA3: 2017, 10 billion EUR (13 billion USD)
- PIA4: 2020, 20 billion EUR (27 billion USD)

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The hallmark of the French AEI, the IDEX, was launched in 2010 as part of PIA1. The Sarkozy government wanted to ensure the emergence of top-ranked universities, which would receive the interest on capital of 7.7 billion EUR (9 billion USD). This was later reduced to 6.35 billion EUR (7.4 billion USD) to fund a successful teaching excellence initiative (*Initiatives d'excellence en formations innovantes*—IDEFI) and some top research units (*Laboratoires d'Excellence*—LABEX).

After François Hollande was elected president of France in 2012, the national staff unions, opposed to the concept of excellence, called for the IDEX program to be stopped.[2] Instead, the government extended the program in the hope that more parts of the country would be represented. PIA2 was launched with 3.1 billion EUR (4 billion USD), earmarked for additional IDEX and a new initiative: *Initiatives Science-Innovation-Territoires-Économie* (ISITE). The initial idea for IDEX was to promote five to ten institutions. With the extension of the program and the launch of ISITE, the Hollande government signaled its intention to ensure that excellence funding was more broadly distributed rather than concentrating on a select few.

PIA funding was also used for other HE programs, bringing the total program spending on HE to around 25 billion EUR (31 billion USD) over a ten-year period.

Selection, Governance, and Monitoring Instruments

Several bodies were involved in the selection and monitoring of IDEX/ISITE, and care was taken, initially, to keep the Ministry at arm's length (Gally 2018). A jury was appointed to evaluate the responses to the call. Of the twenty initial jury members, three represented French industrial research. The others, including the chair, hailed from abroad (elsewhere in Europe and in the Americas) and represented a mixture of high-level government officers, former or current university presidents, and well-known scientists. Although about ten of the original jurors have left over the years, the chair and the overall composition remained stable. The jury organized its work through subgroups, but all decisions were taken by the jury as a whole.

In principle, the jury evaluated the candidates twice: to preselect them for the probationary period and to confirm their IDEX/ISITE status based on an analysis of their progress after four years (i.e., on the agreed trajectory, milestones, and key performance indicators (KPIs)). Some projects (deemed too scientifically strong to fail) received an extension of their probationary period and therefore were subject to more than two evaluations.

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In addition to the jury, other groups were involved in the AEI:

- A new *Commissariat Général à l'Investissement* (CGI), renamed *Secrétariat Général pour l'Investissement* (SGPI) in 2017, located in the prime minister's office, was responsible for the oversight of all PIA funding, including those earmarked for HE.
- The National Research Agency (*Agence Nationale De La Recherche*—ANR) supported the jury's activities, managed the disbursement of funding, and met annually with the successful candidates to discuss their progress on the bases of the milestones and KPIs identified in each project.
- A Steering Committee included representatives from the Ministry of Higher Education and Research, the SGPI, and the ANR. The jury chair reported the jury's decisions to the Steering Committee rather than directly to the press or the candidates.

Representatives of the ANR and SGPI were present as silent observers during the jury's final deliberations. Although the jury was fully autonomous in its decision-making, the Steering Committee could form a different opinion and recommend that the prime minister reject the jury's decisions. This never happened, however, even if failure to be preselected or confirmed—although accepted by the government and announced publicly—was later changed for four applicants into encouragement to reapply.

When President Hollande hosted all the laureates and the jury at the Elysée Palace, his first, convoluted, words stressed the jury's independence and the acceptance of its decisions:

> Firstly, it was necessary to have an international panel and abide by all its decisions. Setting up a panel is not easy, [however] that is something we can still consent to, but accepting that decisions can be imposed on the public authorities is something else; in our French Republic, only the Constitutional Council can have this privilege, yet we accepted it, willingly or otherwise. We accepted that all your recommendations and all your choices would be those of the French authorities. In my opinion, this was a wise choice because it is the one that is the most indisputable. This does not mean that it is not disputed on a number of points—particularly by those who did not obtain the label. But it was undoubtedly, from the international viewpoint, what had to be done so that the winners, that is to say the labelled universities, can justify having an internationally recognized ranking, evaluation, or accolade.[3]

In other words, the international nature of the jury and its capacity to take independent decisions that have been consistently endorsed by the authorities constituted a major break from past practice.

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Selection Criteria

At the launch of the IDEX call in 2009, the Steering Committee (which included the Ministry) seized the window of opportunity to identify criteria that fit its long-standing goal of creating regional HE clusters (Gally 2018). Although initially geared toward individual universities, the IDEX program ended up also inviting clusters to apply for funding to strengthen their alliances. This was reflected in the identification of a set of criteria that were adopted by the Steering Committee:

- Excellence in research and teaching
- The efficiency of the governance
- The intensity of public/private partnerships

These criteria were not quite in line with the initial intention of focusing on excellence in research but were consistent with the Ministry's regional clustering policy.

The criteria were further unbundled by the IDEX jury and categorized as follows:

- Six criteria related to the strategy of research, teaching, socioeconomic partnerships, international visibility, campus life, and human resources (HR).
- Six criteria related to governance and its trajectory over a four-to-ten-year period. A threshold score of "B" (on a three-point scale) on the governance criteria was required to be preselected and then confirmed.

The same criteria were used for IDEX and ISITE, albeit with two slight differences: the spectrum of research strengths was broader for IDEX, and the requirement of solid links to regional partners was stronger for ISITE. Importantly, the criteria that were selected ended up diluting the stress on research excellence, but without leading the jury to select candidates with weak scientific strengths.

Some of the criteria could be measured quantitatively (e.g., bibliometrics and progress in the rankings). Others, such as those related to governance and the vitality of campus life, required on-site measurement. Therefore, the jury decided to approach the evaluation with a mixture of site visits and formal hearings, based on the candidates' self-evaluation reports. The hearings (like the applications) were in English, but the site visits were conducted in French in order to allow a larger circle of the university community to participate.

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Selection Outcomes

Of the seventeen initial IDEX applications, eight were preselected for the four-year probationary period. While the authorities accepted and announced the jury's decisions, two of the rejected projects received special support from the authorities to ensure that they would be considered again in a later round of evaluations: the Parisian alliance Paris Novi Mundu Université (PNMU) and the Lyon project. Both had definite research strengths but were very loose alliances.

In April 2016, at the end of the first probationary period, the following took place:

- The IDEX label was "confirmed" (i.e., with no time limitations and no further evaluation) for three universities: Aix-Marseille, Bordeaux, and Strasbourg.
- Three saw their probationary periods extended: Paris-Saclay, Paris Sciences et Lettres (PSL), and Sorbonne Universités.
- Two, Toulouse and Sorbonne Paris Cité, were stopped.

As with the decisions concerning Lyon and PNMU, the government encouraged the two that were stopped to reapply a year later, which increased to four the number of those that were rescued. All four reapplied. The decision was confirmed in 2022 for the Université de Paris (formerly Sorbonne Paris Cité), but Lyon, PNMU, and Toulouse were stopped after unsuccessful evaluations. These three alliances—although strong scientifically—had governance structures that were geared to the disbursement of IDEX funding with little strategic intent and a weak capacity to make tough decisions.

In 2016 and 2017, the jury preselected nine ISITES and two additional IDEX (Côte d'Azur and Grenoble Alpes Universities) sites, while also accepting the resubmission of the University of Lyon in the IDEX category.

By August 2021, twenty-one preselected projects were confirmed, stopped, or awaiting a final decision: twelve IDEX and nine ISITE. Successful projects were awarded a substantial financial grant. If confirmed as IDEX or ISITE after the probationary period, they receive interest on the grant for ten years, and then the full grant.

Impact

This section discusses the selection outcomes, their aftermaths, and the impact of the program on the institutional and system levels. Discussing the impact on both these levels is challenging at this stage because of the limited number of

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studies available, the number of parallel reforms that have been undertaken, and the other funding instruments that have been made available, which makes isolating the AEI funding difficult. Therefore, the following discussion presents hypotheses rather than firm conclusions. It is also focused only on IDEX, which have all been reevaluated at least twice between 2010 and 2021. It is too soon to measure the impact of the ISITE: to date, only two have been evaluated after their preselection.

Mergers and Alliances

The initial selection outcome had important consequences at the national and institutional levels. The first three confirmed IDEX sites (Aix-Marseille, Bordeaux, and Strasbourg) were merged institutions. The fact that the first wave of confirmations included just those three, and no Parisian candidates, led to dismay in Paris and surprise in the provinces, which recognized the added value of an international jury that was not prejudiced against non-Parisian universities. Nevertheless, the difficulty of explaining what looked like an unusual decision fed the misperception that a merger was a prerequisite to earn the IDEX label. This view was reinforced when a fourth merged institution was confirmed as an IDEX two years later (Sorbonne University). As a result, six of the eleven preselected IDEX sites and four of the nine ISITE sites were newly merged universities. The other program candidates were alliances, and it was precisely the quality of the alliances that became the focus of the jury's attention.

The jury looked for evidence that the project members could develop and implement a shared strategy with respect to all three university missions and internationalization and could promote a dynamic and seamless environment across all the campuses that were part of the project.

In the specific case of an alliance, the jury was particularly attentive to the proposed bylaws, which needed to demonstrate that IDEX/ISITE intended to stamp the alliance's seal on all diplomas and could manage its shared financial and HR as an integrated entity (including the appointment of midlevel academic leaders, such as deans). The fuzzy boundary between a merger and such an integrated alliance fed the perception of the merger as a requirement for IDEX/ISITE.

Regardless, it was easier for merged institutions to meet the jury's requirements of integrated governance. By comparison, the capacity of an alliance to be sufficiently integrated met two interconnected obstacles. First, an alliance requires a new approach that could be called "ecosystem thinking." This is dependent on the capacity to think beyond one's institution and the willingness to share resources with other alliance members. An obstacle to ecosystem

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thinking was linked to the paradoxical reforms that have been implemented by the French government since 2010. These vacillated between strengthening individual universities through increasing their autonomy and strengthening local ecosystems through clustering policies. The latter requires coming to terms with such difficult issues as sharing intellectual property income, deciding how to spend shared funding on new academic recruitments, and increasing interdisciplinarity through interinstitutional research programs while the opportunity to strengthen individual institutions was being offered. Managing these contradictory demands proved difficult for those alliances that lacked good leadership.

Members of failed projects were eager to maintain their autonomy and their identity. When this involved a *grande école*, this obstacle often turned into a brick wall. The strong feeling of identity in the *grandes écoles* was expressed in their attachment to their autonomous legal status. The main reasons they cited included their perception of excessive emphasis on shared governance and collegial decision-making in universities in contrast to their own organizational culture, and the fact that some *grandes écoles* had their own national rankings, which was heavily used as a selection tool by their potential students. Their unspoken fear was about seeing their elite status degraded by joining an institution that did not practice selectivity in student admission to the same extent they did.

Second, while governance arrangements and human resources (HR) had been tightly regulated in France, the jury expected the candidates to take full advantage of the leeway available within the legal framework. This required the courage to take bold decisions and the ability to persuade all alliance members. However, left-leaning staff and student unions were opposed to the concept of excellence. Although this opposition was found across the country, where the unions were sufficiently strong to elect a university president who represented their views, they managed to quash the IDEX candidacy, as happened in Toulouse, for example.

An important aspect of this political obstacle lay in the notion of "a perimeter of excellence," which the candidates had to identify. In effect, the candidates were asked to carve out the best part of the ecosystem (whether of an alliance or a merged university) and exclude underperforming academic units and disciplines—and therefore colleagues—from this perimeter. As Harroche (2021, 15) noted, winning an IDEX requires organizing a local competition as a condition for winning the national competition. This feature fueled criticism, whether it came from an ideological positioning (e.g., Aust, Mazoyer, and Musselin 2018) or simply personal resentment about being left outside the golden circle.

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These two obstacles fed into each other and resulted in opposition to IDEX/ISITE funding from segments of the academic community. The strongest opposition came from the social sciences and humanities (SSH). When the faculties of the imperial university were merged following the 1968 student movement, the perimeter of these mergers was often a conglomeration of disciplines within one broad area (such as SSH or the natural sciences). These two types of universities evolved very differently over time, particularly due to differences in the organization of research activities: mostly an individual endeavor in SSH universities, involving larger teams in the natural sciences. Understanding the importance of critical mass came easier to the latter (see also Aust and Crespy 2009).

Most of the successful IDEX/ISITE sites to date have been coordinated by presidents with a background in the natural sciences or medicine who knew how to mobilize their base. In some cases, they had the courage to cut their losses when the neighboring SSH university resisted joining a merger and they went ahead without it. While the jury understood this challenge, it also grilled the candidates during the hearings about how they would compensate for such a loss. The solution for some was to maintain the SSH university within an alliance that also included the NROs and the neighboring *grandes écoles*.

Impact on Individual Institutions

Each preselected IDEX or ISITE institution was evaluated by the jury after four years based on nine of the twelve criteria mentioned here, which entailed systematic attention to all aspects of a university or alliance. The combination of criteria signaled that a research-intensive university must be professionally and appropriately managed and attentive to teaching and campus life, not only to research, innovation, and internationalization. The impact of IDEX on individual institutions is discussed in relation to five aspects: governing structures, funding, research, talent development, and internationalization.

Governing structures Governing structures became a key criterion for the evaluation of the candidates. The AEI affected the alliances and the merged universities differently.

In general, the alliances chose the path of least resistance. They had to manage a complex change process and could not afford to alienate any segment of their community. Therefore, each member maintained as many prerogatives as possible. The 2018 Ordinance allowed the alliances to integrate any member (particularly a *grande école*) without loss of legal status. While this appeared superficially collegial, by allowing the layering of autonomous structures, the 2018 Ordinance complicated university management, paradoxically

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reduced shared governance (Bernard 2020), and lengthened the decision-making process.

While a positive aspect of the ordinance was to give alliances and universities the freedom to experiment with their governance—a hitherto tightly regulated aspect—it was a step backward in relation to the initial goal of integrating the *grandes écoles*. The jury chair was asked whether he felt that after ten years, the goal of bringing the universities and the *grandes écoles* closer had been achieved. He responded diplomatically: "Progress has been achieved [. . .] but it is certain that this is still sometimes insufficient" (Gérard 2020). This was echoed in a statement from the jury. Reporting on this, a press article stated that the jury praised France's "very impressive progress" over the "last decade." It added that the "transformation" sought by successive governments through the initiatives of excellence was "essential." The jury described a system that was "sclerosed" due to overly rigid legislative frameworks, marked by too much fragmentation and a neglect of students' needs. As a result of the AEI, several French universities are recognized in international rankings. While the excellence of French research is recognized, the jury called on the country to capitalize on the transformations that had been achieved (News Tank 2021d).

The merged institutions were in a different place. An institutional merger represents a major breakthrough and opens the door to the principle of change. While the traditional principles of shared governance, the democratic election of the president, and the intermediate academic leadership posts were left relatively untouched, change was introduced in the professionalization of university management and a more strategic approach to all three university missions. In addition, while in the past, the senior leadership teams were exclusively composed of academics (at least some) universities have now integrated the heads of their administration into the top management team, recognizing the importance of an administration in ensuring the functioning of a much larger and more complex institution. In addition, sixty-one of the seventy-four public universities now have a chief of staff in the president's office (News Tank 2021b). Administrative managers with increased qualifications are being recruited to run key services. The broad contours of governance have not changed much, but management has been professionalized to support an increasingly strategic university more effectively (see also Igaenr 2019), even if the implementation of excellence funding depended on precarious staff—mostly female academics who served as project managers (Harroche 2019). In addition, some of the most challenging mergers were led successfully by women presidents, who are emerging as role models and mentors to the next generation of women presidents.

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From the point of view of the jury, the IDEX winners—whether alliances or mergers—have at their helm leadership teams that know how to position their universities strategically, develop an implementation road map, benchmark internationally, and ensure quality through internal quality assurance processes. Nevertheless, while leadership has been strengthened, it is now constrained in a different way, at least during the probationary period. As Mignot-Gérard (2019, 84) observed, "the content of their decisions is now tightly prescribed by the standards on which excellence policies are based and by the performance steering instruments put in place by the state."

Funding State funding for universities is based on a complex model that is theoretically equitable. It reaches the Organisation for Economic Co-operation and Development (OECD) average. As table 8.1 shows, the overall IDEX funding level is low relative to US or UK universities, which are at the top of the international rankings. Table 8.1 also shows that they tend to have more students (apart from PSL), less funding, and fewer staff than their international competitors. The pressure to manage change with limited resources led administrative staff in one IDEX to ask, "Should we do excellence with three rubber bands and two paper clips?" (Piovezan 2022).

Typically, around 80 percent of universities' budgets go to pay salaries that are decided by the state since most university staff are civil servants. IDEX funding is relatively small. For instance, one of the largest IDEX institutions reported that IDEX funding corresponded to 7 percent of its overall budget in 2021. The universities' ability to diversify their funding sources and to improve cooperation with industry were encouraged and several funding programs that were part of the four rounds of PIA were open to them (some exclusively), thus contributing to the Matthew effect. In parallel, IDEX winners strengthened their capacity to win European and national research grants. Thanks to their PIA funding, they put in place administrative units to monitor calls and support the grant proposals and publications in English. In other words, funding was transformative in boosting change, as any good seed money would do.

Research The candidates were asked to define "a perimeter of excellence" that would have a cascading, transformational effect on the entire ecosystem. In other words, initially only the highest-achieving disciplines could be retained within this perimeter of excellence. The jury looked at how well this perimeter was maintained during the probationary period and was mostly concerned if the perimeter shrunk, which did happen in some cases.

A relatively positive evolution, however, occurred over the past ten years in those IDEX sites where the perimeter expanded through the promotion of

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Table 8.1
Key figures of the confirmed IDEX

University Name	Students (Full-Time Equivalent)	Administrative and Academic Staff	Total Income	NRO Staff	NRO Funding
Aix-Marseille	62,600	8,100	750 million EUR (1 billion USD)	18,000	940 million EUR (1.284 billion USD)
Bordeaux	50,900	6,000	510 million EUR (697 million USD)	2,000	210 million EUR (287 million USD)
Côte d'Azur	31,500	3,600	250 million EUR (342 million USD)	750	90 million EUR (123 million USD)
Grenoble Alpes	53,000	8,600	589 million EUR (805 million USD)	2,200	241 million EUR (329 million USD)
Paris-Saclay	64,400	16,400	1.9 billion EUR (2.6 billion USD)	4,000	450 million EUR (615 million USD)
PSL	16,200	4,400	750 million EUR (1 billion USD)	2,500	273 million EUR (373 million USD)
Sorbonne	51,300	8,200	681 million EUR 930 million (USD)	4,800	587 million (802 million USD)
Strasbourg	56,100	6,400	550 million EUR 751 million (USD)	1,700	220 million EUR (300 million USD)

Source: BIGGAR Economics (2021, 48–53).

interdisciplinarity and the strategic use of PIA funding to improve the whole institution. In taking stock of the past ten years, one early winner noted that it was able to reinforce its research by building on existing strengths and then gradually expanding funding support to a greater number of disciplines, notably through a systematic promotion of interdisciplinary research institutes, including SSH. A mapping of research cooperation tracked the densification of the interdisciplinary research networks within that university. Nevertheless, concerns lingered that even that university was split into two tiers: excellent and average.

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Talent development Talent development was a key consideration in the evaluation of IDEX. The jury looked for evidence of the capacity to attract high-profile academic staff internationally. This meant offering a package of benefits to compensate for the relatively low French salaries, creating chairs, and tenure-track positions, which were new in France. As with governance, however, this was a challenging area since as previously mentioned, university staff in France are civil servants. A comparative analysis of institutional autonomy in Europe shows France trailing with respect to autonomy in managing staff. It is in twenty-seventh place, equally placed with Ireland, out of a field of twenty-nine countries (Bennetot Pruvot and Estermann 2017).

Among IDEX, the merged universities had an easier time coming up with creative HR solutions than the others, principally because they were individual employers. Thus, one IDEX was praised for its proactive HR management, the limits that it placed on internal recruitment, its success in translating IDEX-funded posts into permanent posts, and for increasing the number of PhDs and postdocs. IDEX that were alliances had a much harder time. Some were criticized because they had governance instruments that were too weak to cope with a consensus breakdown, their senior leadership team had no mechanisms to steer appointments, and their HR charter remained too abstract and skeletal to regulate everyday practice.

Internationalization Although internationalization initially was conceived broadly, the authorities and the universities became narrowly focused on success in international rankings. Consequently, the jury considered performance in the Academic Ranking of World Universities (ARWU) and Leiden, discarding other ranking schemes as less reliable. The main challenges for IDEX candidates were twofold:

- They had to adopt a common affiliation for all publications while ensuring that the university affiliation came first.
- Alliance members that were highly ranked had to abandon their individual ranking in favor of the alliance that they joined (with the risk of being dragged down in the rankings).

The jury insisted that these two aspects provided evidence of commitment to a shared destiny. Progress in the adoption of a common affiliation was monitored very closely, and the candidates were grilled when progress was slow. If an alliance member persisted in being ranked individually, this was noted. ARWU and Leiden adopted the same view, refusing to rank a French alliance if one of its members was ranked separately. After the Ministry's lobbying, ARWU decided to rank two alliances (PSL and Paris-Saclay) just before they

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were to be evaluated. In doing so, it considered that these alliances were sufficiently integrated to be considered as single universities. The jury was presented with a fait accompli and changed its focus to determine the conditions under which PSL and Paris-Saclay could lead a step change in the French HE landscape (News Tank 2021a).

A longitudinal analysis to ascertain whether the AEI improved the ranking of IDEX universities is not easy because the HE landscape had been in flux with many alliances and mergers underway. To illustrate, the three top French institutions in ARWU 2016 no longer exist (News Tank 2020). Nevertheless, among the top 100 in ARWU 2021, Paris-Saclay was ranked thirteenth (the first time such a high ranking had been achieved by a French university), Sorbonne University was thirty-fifth, PSL thirty-eighth, and the University of Paris seventy-third. Although all four benefited from IDEX funding, given how modest it was, it is difficult to argue that there is a direct causality with the improved ranking. There might be, however, an indirect causal link, in that the IDEX process was misperceived as encouraging mergers and a direct link due to the insistence on there being a common signature on publications, including from the alliances. Both mergers and alliances increased their size, and therefore their international visibility, mechanically.

Aside from the complex topic of rankings, the jury tended to look at "international visibility" as being about more than position in international rankings, rather referring to internationalization strategies in a much broader sense than government officials did. Therefore, the candidates were asked probing questions about their international strategy and benchmarking. With a few exceptions, they generally scored a "B" on these criteria, reflecting an internationalization that has tended to be more passive than active. France attracts students and staff, and this attractiveness has lulled universities into complacency in this regard. However, anecdotal evidence points to growing strategic intent, at least on the part of confirmed IDEX institutions that are now defining their geographical targets and favoring deeper and broader collaborations with a few partners as opposed to a multitude of bilateral mobility agreements. In that, IDEX universities are joining a broader European trend, albeit one that was identified ten years ago (Sursock and Smidt 2010, 73).

National Impact

The national impact of the AEI is discussed here in relation to four aspects: national research performance, the transformation of teaching, the structure of the national HE system, and the differentiation of universities.

Research A recent report (OST 2021) on the period 2005–2018 provides an in-depth analysis of France's scientific position based on publications and

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applications to the European Research Council and complemented by comparing ten IDEX sites to the members of the League of European Research Universities (LERU) except for France, and the Association of American Universities (AAU), which are two selective associations of research-intensive universities. Its findings reported the following:

- France was ranked sixth in 2005 by the number of publications but fell to ninth position in 2018. Its global share of publications fell by one-third between 2005 and 2018, the second largest decline after Japan.
- France dropped from fifth place in 2005 to eighth place in 2018 based on the percentile of most-cited publications.
- In 2016–2018, France was not highly specialized in the fields that produce the most publications worldwide or in the most dynamic fields since the beginning of the twenty-first century.
- The indicators of excellence of IDEX-based publications are higher than for non-IDEX. Between 2007 and 2017, the volume of publications by IDEX universities grew at the same rate as that of the members of the AAU. However, when compared to the publications by LERU members (France excluded), the latter showed stronger growth.

In effect, the situation might have been worse without the IDEX universities.

The report notes the weak performance of France in the SSH compared to the LERU and AAU universities. This is confirmed by the head of the European Research Council, who noted that France (like Germany) submitted threefold fewer grant applications in SSH than the UK did (Bourguinon 2021). This is of concern because some SSH universities have chosen not to join the merged university or the alliance in their region, so they are staying out of the change process.

The aggregate results of ARWU 2021 put France in third place, after the US and the UK, in the group of countries with universities in the top 50. Nevertheless, while the top two French universities progressed from the preceding year, five dropped slightly and ten remained in place, thus confirming the PSL president's stark observation that "all is not well in French research. It is going backward whether one considers scientific production, the citation impact or the number of publications that are the most highly cited in the world (the top 1%)" (News Tank 2020). A year later, a Clarivate analysis confirmed the downward trend (News Tank 2021c). In short, seen from the perspective of individual universities, the impact of IDEX has been positive, but at the aggregate level, the evidence is mixed. Clearly, French universities require more autonomy and funding and continued attention to the quality of the whole system, not just a few universities.

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Transformation of teaching Teaching was one of the criteria considered by the jury. Among the IDEX universities, many reforms were focused on all three educational levels, albeit particularly at the master's and doctorate levels. Two parallel PIA funding focused on teaching (IDEFI launched in 2012 and the *Nouveaux cursus à l'université* in 2017) gave a boost to the notion of pedagogical reforms. Up to then, the notion that pedagogical transformation should be of concern to university staff was largely rejected on the ground that pedagogy was better left to the school level. A year after IDEFI was put in place, the universities receiving this grant were networking and exchanging best practices across France. Soon, centers for teaching and learning started to be created in universities. A movement began that installed the notion that academics could be supported in their teaching and students in their learning. Annual high-profile national events have been organized to support this movement.

The IDEX applicants benefited from these developments. They were also required to improve the learning environment. Campus life, one of the jury's criteria, is one area where evolution has been noticeable as well. The 2021 activity report of the Observatory of Student Life (*Observatoire de la Vie Étudiante*, or OVE) remarked that student life is now perceived by local, regional, and national players as an important factor in the attractiveness of universities and the success of their students. The OVE report noted that the concept of student life has changed considerably to embrace many aspects, including financial, economic, social, lifestyle, and access to health services (OVE 2021, 34, 59). This is a step change in France, where some student services (such as housing and food services) have been the responsibility of a national agency rather than the universities or, in the case of psychological services, could be outsourced. Although OVE does not link this change to the AEI, the presence of this criterion has encouraged the IDEX universities to pay attention to aspects that many had discounted as being outside their responsibility.

The structure of the national HE system and the differentiation of universities IDEX institutions have had an impact on the structure of the national system and the greater differentiation of universities. This has happened via the national and regional authorities, as well as the universities, both IDEX and non-IDEX.

A feature of national policy has been to ensure a degree of coherence across the country. Referred to as *aménagement du territoire*, loosely translated as a "leveling-up agenda," this concern was addressed by ISITE funding and other PIA funding instruments that were open to IDEX and non-IDEX universities. "ExcellenceS," the latest funding call (June 2021), aims at funding many types of excellence; strengthening IDEX and ISITE winners, as well as other

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universities or university alliances; and promoting differentiation based on individual institutional strategies. The 2018 Ordinance provides a ten-year window to experiment with governance arrangements, which might lead to further differentiation.

In parallel, regional authorities, which benefited from recent decentralization policies, became increasingly interested in their universities and in the clustering process of the past fifteen years. Until then, regional budgets (with some notable exceptions) included limited funding for HE, but this has now become an important priority. In 2017–2019, local and regional authorities spent an average of 890 million EUR (1.2 billion USD) annually on research and development (R&D) and 690 million EUR (920 million USD) on HE real estate and equipment, operating budgets, and financial aid for students (Cojean 2021). The regions have taken a keen interest in the success of their universities in obtaining PIA funding and in ensuring that local and regional priorities are considered in universities' strategies. In so doing, they have contributed to the differentiation process as well.

The IDEX label has had paradoxical effects on the system: it stimulated cooperation among IDEX winners, and sometimes with their neighboring HE institutions, as well as differentiation with other universities nationally. The first three IDEX sites, soon joined by the fourth, were in regular contact and shared best practices informally. Since 2008 (i.e., before the PIA), an association akin to AAU and the Russell group in the UK, had seventeen members by 2020.[4] It was replaced by UDICE (a play on the French words for U-Ten) that includes only ten research-intensive universities, the nine IDEX institutions and the University of Lyon. While this was happening, another association was created in 2017, the *Alliance des Universités de Recherche et de Formation* (AUREF), which groups thirty-one (non-IDEX, smaller) "universities of research and teaching" with the stated aim of promoting cooperation and "a balanced and dynamic higher education system." Universities are now represented by three groups, illustrating the differentiation of French HE: the *Conférence des présidents d'université* (CPU), as the umbrella organization, and two mission groups, AUREF and UDICE.

Sustainability

The sustainability of IDEX/ISITE has been boosted by giving them exclusive access to some PIA funding streams. Furthermore, legal reforms have supported changes such as the 2021 Act on Research (*Loi de programmation de la recherche*), whose goal is to strengthen French research.

Nevertheless, several developments point to the difficulty for the state to stay the course and ensure policy coherence. The 2018 Ordinance and several other

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recent funding initiatives have shown that the government is prudent in not upsetting the *grandes écoles* or the NROs and not forgetting its own goal to put the universities at the center of a defragmented HE landscape. For instance, in announcing a new funding call (7 billion EUR, 10 billion USD) for health research (June 2021), President Emmanuel Macron criticized the compartmentalization of the French health research but failed to mention universities as a recourse. Furthermore, a new PIA instrument (*Programmes et Equipements Prioritaires de Recherche*—PEPR) to fund priority research programs and equipment will be led by NROs rather than universities. In response, the CPU president stated that it is "the state itself that organizes this compartmentalization [. . .], that puts NROs and universities in competition with one another." He enjoined the government "to use our universities wisely, they are structured to make the different actors work together, and do not exclude them from the process that will shape innovation in the country" (News Tank 2021b).

An evaluation of the PIA published in 2019 applauded the impact of IDEX but deplored the lack of coherent linkages with HE policy. It recommended reviving the HE reform process and focusing it on improving the coordination between *grandes écoles*, NROs, and universities (Barbizet 2019, 23). A few years later, a report by the State Accounting Office asked that the return on investment of the PIA be evaluated (Cour des comptes 2021).

Overall Assessment Is Mixed

While the AEI has become an entrenched part of the landscape, there are varying points of view regarding its overall assessment. Limited evidence shows that while the winners (and some nonwinners) are improving, the rest of the HE system needs attention. French universities have been clamoring for greater autonomy, funding, and policy coherence for several decades, but progress on these fronts has been slow. The IDEX/ISITE jury characterized the initiative as a "truly transformative project," but it also noted major limiting factors such as "a lack of government coherence, the limited flexibility and autonomy enjoyed by French higher education institutions, [and] the resistance to change of the Humanities and Social Sciences in many universities" (Le Prestre et al. 2018, 79).

The beneficiaries—at least as represented by their leadership and those inside the "perimeter of excellence"—have been pleased to receive such a label and to have had access to additional funding. They can also measure the strategic development of their universities and have been attentive to enlarging the perimeter of excellence. The unsuccessful candidates have expressed a great deal of frustration—talking about injustice, for instance (e.g., Bouviala 2021)—which indicates the importance of this initiative. Some unsuccessful alliances

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have rebounded by improving their effectiveness (see, e.g., Conraux 2021). Some of the universities that did not apply also embarked on more strategic thinking than had been the case before.

Successive governments have kept the same jury in place, with the same chair, and have accepted all the jury's decisions. This is evidence of bipartisan support for AEI and confidence in how the evaluations have been carried out. Furthermore, the progress of the individual IDEX winners in the international rankings has been satisfying to the regional and national authorities and celebrated in the mainstream press.

Nevertheless, different interpretations of excellence between the international jury and the French authorities have been at play, particularly with respect to governance. It has not been easy for some jury members to accept some features of the French HE system, such as the election of university presidents, vice presidents, and deans, and the president serving as the chair of the administrative board instead of being accountable to it. To the extent that IDEX/ISITE was conceived as a lever for change, the jury has felt invested with the mission to be a voice of change in French HE. The chair has had to ensure that the jury walks a fine line between considering the legal realities and enabling the selection process to be a force for change.

Similarly, the role of the Ministry is also challenging. Given France's centralization history, even though the universities have been granted more autonomy than in the past, there is still a very close relationship between the Ministry and the universities. Candidates received advice from the Ministry (and from CGI/SCGI) that was sometimes inconsistent with the jury's interpretation of the criteria. This has had no influence on the jury's decisions, but it has put a strain on the candidates, who are pulled in different directions due to dissimilar understandings of excellence. In addition, it is only the Ministry, which is responsible for HE and research, that is part of the Steering Committee. This means that the ministries overseeing some of the *grandes écoles* have not been part of the Steering Committee, leading some of them to bolster the *grandes écoles*' resistance to change and closer association with the universities.

It is difficult to generalize about NROs. They differ among themselves and in their approaches to the various IDEX sites. Some realize that there are important differences between the organization of research in France and in the rest of the world and encourage greater integration of their NROs with IDEX. Others continue to promote their own strategy, at the cost of limiting IDEX's strategic role.

The multiple interpretations of excellence can also be traced historically. Initially, the definition of excellence was vague. Is it about scientific excellence or project management and governance? Is it about individual universities or

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university alliances? Does a merger epitomize excellence, or are there other forms, and, if so, what are they? Gradually, over the course of evaluation rounds, applicants tried to ascertain the jury's and the authorities' doctrines, not always accurately. "Doctrine" did not capture their relatively open minds to new forms of governance, so long as strategic institutional decisions were ensured.

Summary

The French AEI has had mixed results. It has improved the beneficiaries, particularly the merged institutions, and to a certain extent the system, thanks to funding that was more broadly distributed than to just a select few. It has shone a light on excellence outside Paris. It has put the focus on alliances of HE institutions rather than on one institution at a time. In doing so, it has emphasized governance and project management, not only scientific strengths (Aust, Mazoyer, and Musselin 2018). It has strengthened strategic and benchmarking abilities and promoted new opportunities for interdisciplinarity, strategic internationalization, teaching innovations, and the vibrancy of campus life. It has boosted the leadership capacity of the system (Jury chair, personal communication).

In combination with several reforms, the AEI has accelerated change in French HE. Successive governments have been more open to the idea of experimentation and differentiation, two concepts that are challenging for the egalitarian French society to handle. IDEX funding has had an indirect and positive effect on some of the non-IDEX winners, which have had to identify and build on their strategic strengths. The regional authorities' interest in having winners translated into greater funding for universities and greater differentiation. All these changes are leading to the notion of "distributed excellence," a concept that comes close to the egalitarian ideals.

Factors contributing to the success of IDEX include the clear criteria on which evaluations are based, the international jury, the experienced chair, and the continuity in jury membership (half of whom, including the chair, had been in the jury since 2010), which has guaranteed coherent decision-making, despite governmental changes (as illustrated by the five successive ministers since the jury chair was appointed).

The jury has kept abreast of policy changes in the French HE environment, and its chair has been very clear about the respective roles of the government and the jury. As an example, a journalist questioned the chair on the 2018 Ordinance that had significant consequences on the work of the jury. He stated unambiguously: "The jury has no opinion on the text. It has simply to work in

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this new context" (Gérard 2020). The jury has also endeavored to be a force for change through its evaluations and decisions, although its reach has been somewhat limited by its constrained communication with the public. The jury chair gives interviews to specialized press routinely and willingly contributes to events and conferences. However, the full evaluation of each project is not published (although project leaders could decide to do so themselves), and the final decisions are communicated by a press release from the Ministry and the SGPI. This is sometimes relayed to the specialized press in an ambiguous way with respect to the responsibility for the final decisions (the jury or the government?) and may feed rumors that decisions are political, as Musselin (2021) noted by comparison to the open way that Germany handles this part of the process.

Most important, however, the successful IDEX have been able to channel their scientific power to show that they are capable of building on selective research strengths and transforming their institutions. So far, the mergers have been successful; the alliances are more fragile constructions. The post-ten-year experimentation period will provide evidence of the latter's capacity to transform into well-integrated institutions (Salmi 2021).

The current advances have confirmed the strengthened managerial and leadership skills of a few university presidents who have successfully developed solid leadership teams over a span of several years. Time will tell if their successors will be able to sustain the initial efforts. Legislation and funding, while important change factors, can have only a limited impact if organizational cultures do not change.

These mixed results could be attributed to the triple shift that has been engineered since 2010. The initial governmental policy of ensuring the emergence of a handful of research-intensive universities was disrupted by the Ministry to fit its own goals of ensuring a more holistic definition of quality, reducing the impact of funding concentration, and using AEI funding to buttress its long-standing policy of regional clustering. In effect, this made the French AEI more ambiguous in its approach and more difficult to evaluate. These shifts point to the importance of focusing on how a policy instrument such as AEI, which is found elsewhere in the world, is filtered through, and processed by, a specific political culture, subject to political reinterpretation over time.

Notes

1. Jean-Marc Rapp, chair of the IDEX/ISITE jury, and Marc Saillard, Agence Nationale de la Recherche, are thanked for reviewing an early draft for accuracy.

2. French Wikipedia, "Initiative d'excellence." https://fr.wikipedia.org/wiki/Initiative_d%27excellence.

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3. English translation provided by the Elysée Palace. All other quotes from French sources were translated by the author.

4. *Coordination des universités de recherche intensive françaises.* https://fr.wikipedia.org/wiki/Coordination_des_universités_de_recherche_intensive_françaises.

References

Aust, Jérôme, and Cécile Crespy. 2009. Napoléon renversé? Institutionnalisation des Pôles de recherche et d'enseignement supérieur et réforme du système académique français. *Revue française de science politique* 59 (5): 915–938 (in French).

Aust, Jérôme, Harold Mazoyer, and Christine Musselin. 2018. Se mettre à l'Idex ou être mis à l'index: Conformations, appropriations et résistances aux instruments d'action publique dans trois sites d'enseignement supérieur. *Gouvernement et action publique* 4 (4): 9–37 (in French).

Barbizet, Patricia. 2019. *Le Programme d'investissement d'avenir, un outil à préserver, une Ambition à Refonder. Evaluation du premier volet du Programme d'investissement d'avenir (PIA, 2009–2019).* Comité de surveillance des Investissements d'avenir, chaired by Patricia Barbizet. November 2019. https://www.gouvernement.fr/sites/default/files/contenu/piece-jointe/2019/12/synthese_rapport_evaluation_pia.pdf (in French).

Bennetot Pruvot, Enora, and Thomas Estermann. 2017. *University Autonomy in Europe III: The Scorecard 2017.* Brussels: European University Association.

Bernard, Sébastien. 2020. Les établissements public expérimentaux: Une révolution silencieuse pour l'enseignement supérieur et la recherche. *L'Actualité juridique. Droit administratif* 40: 2306–2313 (in French).

BIGGAR Economics. 2021. *Economic Contribution of UDICE Universities. A Final Report to UDICE*. Penicuik, UK: BIGGAR Economics.

Bourguignon, Jean-Pierre. 2021. "ERC and Horizon Europe." Webinar. *Club des organismes de recherche associés (CLORA).* Brussels, February 4, 2021.

Bouviala, Alice. 2021. L'UBFC, déçue par l'arrêt de l'isite, va "faire en sorte de trouver les financements" manquants (D. Grevey). *AEF info*, No. 655135, July 2, 2021 (in French).

Chatelain, Stéphanie, Stéphanie Mignot-Gérard, Christine Musselin, and Samuel Sponem. 2014. The use of indicators in French universities. In *Bibliometrics: Use and Abuse in the Review of Research Performance*, edited by Wim Blockman, Lars Engwall, and Denis Weaire, 129–141. London: Portland Press.

Cojean, Thibaut. 2021. Régions : Zoom sur les compétences dans l'enseignement scolaire, l'orientation et le supérieur. *L'étudiant*. July 2, 2021 (in French).

Conraux, Gwénaëlle. 2021. Toulouse: "Nous proposons une voie significativement intégrative et qui respecte la diversité de l'écosystème (P. Lévy)." *AEF Info*, No. 655055, July 2, 2021 (in French).

Cour des comptes. 2021. *Le programme d'investissements d'avenir: Un acquis à consolider, un rôle spécifique à mieux définir—Exercices 2010–2020.* Brussels: Cour des comptes (in French).

Gally, Natacha. 2018. Entre *executive shift* et gouvernement à distance: la genèse des politiques "pour l'excellence" dans le secteur de l'enseignement supérieur et de la recherche (2009–2012). *Revue française de science politique* 68 (4): 691–715 (in French).

Gérard, Anaïs. 2020. Jean-Marc Rapp: Il y a des invariants qui fondent une université intégrée, notamment la nomination des dirigeants. *AEF Info*, No. 619810, January 20, 2020 (in French).

Harroche, Audrey. 2019. Les petites mains de l'excellence. Place et rôle des chargées de projet dans la mise en œuvre d'une initiative d'excellence. *Revue française d'administration publique* 169: 151–168 (in French).

Harroche, Audrey. 2021. *Gouverner par les inégalités, la mise en œuvre d'une initiative d'excellence dans l'enseignement supérieur et la recherche.* Paris: Centre de Sociologie des Organisations, Science Po (in French).

Downloaded from http://direct.mit.edu/books/book-pdf/2218384/book_9780262376693.pdf by guest on 18 November 2024

Igaenr. 2019. *Premier bilan des fusions d'universités réalisées entre 2009 et 2017, Inspection générale de l'administration de l'éducation nationale et de la recherche*. Paris: Inspection générale de l'administration de l'éducation nationale et de la recherche (in French).

Le Prestre, Philippe, Jean-Marc Rapp, Yves Bamberger, Beatriz Barbury, Martha Crawford, Pierre de Maret, et al. 2018. France's quest for excellence in higher education: Towards a new French Revolution? *Journal of the Higher Education Area* 8 (1): 79–95.

Mignot-Gérard, Stéphanie. 2019. De la bonne gestion à la "performance." Transformation des modes de pilotage étatique et recomposition du pouvoir des dirigeants universitaires de 1998 à 2011. *Revue française d'administration publique* (169): 29–88 (in French).

Musselin, Christine. 2001. *La longue marche des universités françaises*. Paris: Presses universitaires de France (in French).

Musselin, Christine. 2021. Comment faire de la France une nation scientifique? *Les rencontres du sup*, Club d'Iéna, Accessed July 4, 2021. https://www.clubdiena.fr/23-fevrier-2021comment-faire-de-la-france-une-nation-scientifique-avec-alain-fuchs-president-de-luniversite-psl/ (in French).

News Tank. 2020. "Shanghai 2020: Progression 'spectaculaire' (A. Fuchs), un effet du financement PIA." G. Roussel, No. 191514, August 31, 2020 (in French).

News Tank. 2021a. "Les classements internationaux d'universités depuis 2016." No. 211178, March 12, 2021 (in French).

News Tank. 2021b. "Directeurs de cabinet: 'Mutation et professionnalisation' de la function." No. 223449, July 13, 2021 (in French).

News Tank. 2021c. "Les 142 'highly-cited researchers français' en 2021 (Clarivate)." No. 234184, November 17, 2021 (in French).

News Tank. 2021d. "Rapport du Jury Idex sur PSL & Saclay." No. 209722, February 26, 2021 (in French).

Observatoire des Sciences et Techniques (OST). 2021. *La Position Scientifique de la France dans le Monde et en Europe 2005–2018*, by Frédérique Sachwald. Paris: Hcéres (in French).

Observatoire de la Vie Étudiante (OVE). 2021. *Rapport d'activités 2018–2020*. Paris: Observatoire de la Vie Étudiante (in French).

Piovezan, Sarah. 2022. Université Paris-Saclay: Un rapport pointe les risques psycho-sociaux à "vouloir faire de l'excellence" sans moyens. *AEF Info*, No. 665426, January 19, 2022 (in French).

Salmi, Jamil. 2021. Les universités à l'échelle du monde. Qu'est-ce qu'une université de rang mondial? Où en est la France? In *Les Universités en France*, edited by Frédéric Forest, 290–294. Presses Universitaires de Rouen et du Havre (in French).

Soulé, Véronique. 2010. Pour vous, que signifie l'excellence à l'université ? Cinq figures de l'enseignement supérieur jugent les réformes en cours. *Libération*, September 27, 2010 (in French).

Sursock, Andrée. 2014. Alliances and mergers in France: Incentives, success factors and obstacles. In *Mergers and Alliances in Higher Education: Current International Practice and Emerging Opportunities*, edited by Luke Georghiou, Adrian Curaj, Jennifer Cassingena Harper, and Eva Egron-Polak, 23–39. Heidelberg, Germany; New York; Dordrecht, Netherlands; and London: Springer.

Sursock, Andrée, and Hanne Smidt. 2010. *Trends 2010: A Decade of Change in European Higher Education*. Brussels: European University Association.

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9

The Long and Winding Road to Excellence: The German Case

Torger Möller and Stefan Hornbostel

Introduction

The German Academic Excellence Initiative (*Exzellenzinitiative*, designated further in the text as "German AEI" or just "AEI") has been the most highly regarded funding program in Germany in recent years and has been accompanied by high expectations, but also concerns. First, we present the particularities of the German higher education (HE) and research system and then elaborate the reasons why German science policymakers decided in 2005 to start the AEI and why a relaunch in 2016, under the name Excellence Strategy (*Exzellenzstrategie*), was required. In the main part of the discussion, the program goals, funding lines, and review and selection process are described, and then we explain aspects of the AEI and its effects on the German research system. Did the AEI lead to the formation of top international research at German universities? Or has the competition for excellence ended up dividing the German HE system into winners and losers?

The German HE and Research System

The German science system can be subdivided into two parts: the HE sector and the nonuniversity research sector (*außeruniversitäre Forschung*). Of the current 420 HE institutions, including HE institutions of art, music, and applied sciences, 272 are publicly owned (along with 38 ecclesiastical and 110 private). Based on the German constitution (*Grundgesetz*), the jurisdiction for HE institutions is with the sixteen states (*Länder*). The private but state-accredited HE institutions are generally very small, have the right to award doctorates only in exceptional cases, and generally do not release any significant research output. Research output in the German HE system is primarily provided by the eighty-seven public universities, all of which have the right to award doctorates (Hochschulkompass 2021). The total expenditure of the HE institutions was 55.8 billion EUR (75.1 billion USD) in 2019, plus 5.2 billion EUR (7.0

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billion USD) for so-called investment expenditures (Statistisches Bundesamt 2021b). The HE institutions have 737,800 employees (406,659 academic/artistic, including 48,547 professors, and 331,103 administrative and technical staff). 2,891,000 students were enrolled, of which about 9 percent were at private HE institutions (Statistisches Bundesamt 2020, 2021b).

In addition to the HE institutions, the second pillar of the German science system is the public, nonuniversity research sector, which includes the academies and the research institutions of the federal government and the states, as well as four large nonuniversity research organizations jointly financed by the federal government and the states. The largest is the Helmholtz Association, with nineteen research centers that operate large research infrastructures such as the German Electron Synchrotron (*Deutsches Elektronen-Synchrotron*—DESY) and pursue long-term research goals. The internationally renowned Max Planck Society primarily conducts basic research in its eighty-six institutes, while the Fraunhofer Society (seventy-four institutes) specializes in application-oriented research in cooperation with industry. The ninety-six institutes of the Leibniz Association conduct basic and applied research on societal needs. The public nonuniversity research sector does not undertake teaching.

To compare the two sectors, it is useful to consider pure research and development (R&D) expenditures and R&D staff. In 2019, there were 151,200 R&D full-time equivalents in the HE and 112,600 in the nonuniversity sector. R&D expenditures were 18.4 billion EUR (24.8 billion USD) in the HE sector and 14.2 billion EUR (19.1 billion USD) in the nonuniversity sector (Statistisches Bundesamt 2021a). The ratio of R&D expenditures between the two pillars is remarkable, as it has remained more or less unchanged since the beginning of the 1980s. About 55 percent of R&D expenditures are allocated to HE institutions and 45 percent to nonuniversity research organizations (Möller 2019, 5).

Nonuniversity research organizations and their independent institutes have a wide range of research collaborations with HE institutions, which have increased further over the past fifteen years.

Policy Background of the German AEI

Various science policy debates, expectations, and challenges preceded the German AEI:

- In the 1990s, a discussion started about the quality of German HE institutions and their performance. In 1991, the former chairman of the German Council of Science and Humanities (*Wissenschaftsrat*), Dieter Simon,

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called for urgent reforms with the following statement: "The German university is no longer 'healthy at its core', but rotten at its core. It needs reorientation" (Simon 1991). In the context of the emergence of New Public Management (NPM) models, the idea arose that German HE institutions would benefit from more competition.

- The idea of a German AEI came at a time when new research and innovation efforts were proclaimed by national and international (science) policymakers, such as in the German innovation offensive Impulses for Research and Innovation or the Lisbon Strategy of the European Union (EU) (Hornbostel and Möller 2015, 12). In this context, the willingness of German science policymakers to provide additional money for research increased. Germany raised its share of R&D expenditures from 2.5 percent to almost 3 percent between 2000 and 2012. Two-thirds of R&D expenditures were made in the business sector and one-third in the HE and government sectors (GWK 2014, 8).
- In HE, there were various conflicts between the German federal government and the states, which further shaped science policy measures and the German AEI. The core issue is Article 91b of the German constitution, which stipulates that the federal government may become involved in HE only with the consent of all sixteen states. Until 2014, this was possible only on a project-related and temporary basis. Unlimited project-related cooperation became possible after 2015 following an amendment to the constitution. In any case, a joint agreement between the federal government and all states is required. For this reason, there have been three excellence agreements between the federal government and the states to date (Exzellenzvereinbarung 2005, 2009; GWK 2016).
- With the emergence of international comparative university rankings—most of which are methodologically questionable but nevertheless had a strong impact—it became obvious that German HE institutions were not among the international top performers. In the international university rankings, no German university was represented in the top 50 in either the Shanghai Ranking (2003) or the *Times Higher Education* (THE) Ranking (2004). Similar to France, Germany experienced a "Shanghai Shock" in 2003, which increased the pressure on German science policymakers to act (more about "Shanghai shock" see: Dobbins 2012).

In January 2004, the Federal Ministry of Education and Research proposed a university competition under the slogan "Brain up! Germany is looking for its top universities" (Spiegel 2004). The idea was to provide four to six

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universities with additional research funds so that they could catch up with the top international universities. The proposal to promote only a few universities was strongly criticized, especially by the science policymakers of the states, who called for the support of further excellent areas in more universities and more states. The idea of selecting only a few universities and concentrating financial resources to initiate the German equivalent of Harvard or Oxford was not feasible in a federal country like Germany. The initial idea of the Federal Ministry of Education and Research was transformed, and in 2005, the federal government and the sixteen states signed the first joint agreement on the German AEI.

Academic Excellence in the Context of the German AEI

Helga Nowotny, former president of the European Research Council, once said that you cannot define excellence, but you recognize it when you encounter it (Nowotny 2012). If there is always something original and innovative inherent in academic excellence that was previously unknown, then this new thing cannot be defined beforehand. An observer can recognize excellence because they encounter it, and thus it no longer remains unknown. In theoretical terms, this may be reasonable, but in practical terms, the question arises of who is capable of recognizing excellence in review procedures. Only the most outstanding scholars are considered to have the ability to recognize excellence. The definition of excellence is thereby replaced by the excellent judgment of the reviewers. Selecting excellent reviewers is easier in the sense that they can be evaluated retrospectively based on their performance and their standing in the international scientific community. Proposals, on the other hand, can only be evaluated before there are any outcomes (ex-ante evaluation). This form of procedural excellence is present in the context of the German AEI. The goal of the AEI was to fund top research at an international level. In this respect, the applications were reviewed by internationally renowned scholars who were neither employed nor had completed a major part of their career in Germany (Möller et al. 2012, 26). About two-thirds of the reviewers came from Europe and about one-third from North America. A total of 80 percent of the reviewers were full professors (7 percent professor emeritus), who on the whole had a great deal of experience in reviewing. The inclusion of international reviewers also had a practical aspect. Due to the simultaneous competition between German universities, there were hardly any reviewers in Germany who were not potentially biased.

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The German AEI

The Program and Its Goals

The central goal of the AEI was "to strengthen Germany as a scientific location in a sustainable manner" and "to improve its international competitiveness" to increase "international visibility" (Exzellenzvereinbarung 2005). A "performance spiral" should be set in motion to "develop top-level research" and to "raise the quality of Germany as a location for higher education and scientific research broadly" (Exzellenzvereinbarung 2005, 1). At first glance, this seemed to mark a paradigm shift in the German HE system from an egalitarian to a competitive model. However, this paradigm shift was ultimately based on a fiction of equality (Wintermantel 2008) because even before the AEI, the German university landscape was divided into institutions with stronger and weaker research capabilities competing for third-party funding, especially from the German Research Foundation (*Deutsche Forschungsgemeinschaft*—DFG). In addition to the main goals of the AEI, further objectives from the science policy discourse at the time were included in the program, such as the promotion of young researchers, interdisciplinary research, the promotion of gender equality, and the expansion of cooperation between HE institutions and the nonuniversity research sector.

The initial funding period of the AEI (2006–2011) was extended to 2017 by a follow-up agreement with the same goals (Exzellenzvereinbarung 2009). Due to the changed conditions (revision of §91b of the German constitution in 2014), the federal and state governments finally agreed on the successor program, Excellence Strategy (GWK 2016). Since funding for the Excellence Strategy did not begin until 2019, the projects in the AEI received transitional funding (primarily in 2018, and in some cases also in 2019). Even though the Excellence Strategy is now a permanent funding program, single projects are subject to evaluation every seven years. New applications are also possible at those times. From the universities' perspective, the competitive and time-limited nature of the funding remains.

Only the universities, not the researchers themselves, are authorized to apply. Therefore, universities invested (to varying degrees) a lot of time and money in consultation, developing researcher participation procedures, setting up steering committees and working groups, and coordinating policy with building management capacity.

The AEI is not based on a formula-driven allocation of funds, but rather on a competitive procedure comparable to traditional grant application procedures that include a peer review and selection process. Universities can apply for three funding lines: (1) Graduate Schools (GS) for promoting young scientists;

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Table 9.1
The German AEI and Excellence Strategy, their funding periods, funding lines, and number of projects

	AEI	AEI	Excellence Strategy
	(2006–2012)	(2012–2017/18)	(2019 continuous)
1. Graduate Schools (GS), 10% of the funding amount	39	45	N/A
2. Cluster of Excellence (CoE), 60–70% of the funding amount	37	43	57
3. Future Concepts/ UoE (UoE), 30% of the funding amount	9	11	13
Overall funding per year	c. 418 million EUR (563 million USD)	c. 418 million EUR (563 million USD)	c. 533 million EUR (717 million USD)

Source: Authors' compilation from different sources, references in the following text.

(2) Clusters of Excellence (CoE), promoting collaborative top-level research; and (3) the Future Concept for the entire university (table 9.1). Success in the third funding line was associated with the unofficial title of "University of Excellence (UoE)."

In the first funding period (2006–2011), thirty-nine GS and thirty-seven CoE were selected. A prerequisite for success in the third funding line (Future Concept) was that the university had to have won at least one GS and one CoE. Nine UoE were finally selected from the pool of remaining applicants. The same selection rules applied for the second funding period (2012–2017/2018). Awards were made to forty-five GS, forty-three CoE, and eleven UoE. With one exception (a cooperative application), only publicly funded universities were successful in the AEI. Of eighty-seven public universities, thirty-six (41 percent) received funding in the first funding period and forty-four (51 percent) in the second. The original idea of concentrating funding on a few universities was completely abandoned.

In the Excellence Strategy program (from 2019), fifty-seven CoE and thirteen UoE (ten universities and an association of the three major Berlin universities) were selected. Due to the discontinuation of the GS funding line (as explained next), thirty-four of the public universities (39 percent) were successful with the Excellence Strategy.

Funding Amount

In the first two funding periods of the AEI (2006–2017), a total of 4.6 billion EUR (6.2 billion USD) was invested in the German HE system. A total of

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75 percent of the funds came from the federal government, and 25 percent came from the states. Taking into account the partially delayed start in 2006 and 2007, this approximately corresponds to annual funding of 418 million EUR (563 million USD) (Hornbostel and Möller 2015, 18). After a public discussion of increasing the funding for the successor program, the federal and state governments agreed to provide about 533 million EUR (717 million USD) annually for the Excellence Strategy (GWK 2016). Between 2006 and 2021, a total of 6.7 billion EUR (9.0 billion USD) was spent on the German AEIs.

In terms of the individual funding lines, about 10 percent of the money in the AEI went to GS, 60 percent to CoE, and 30 percent to Future Concepts (Möller et al. 2012, 96). In the Excellence Strategy, slightly more than 70 percent of the funding was directed to CoE, and just under 30 percent to Future Concepts (BMBF 2019). The most important funding line in terms of financial volume was CoE. In the first funding period (2006–2011), 1 million EUR (1.3 million USD) could be applied to a GS and 6.5 million EUR (8.7 million USD) to a CoE. An average of 12.6 million EUR (17 million USD) per year was available for the nine institutional Future Concepts. The so-called UoE, which had to be successful in all three funding lines, received at least 20 million EUR (26.9 million USD) per year, and five of the excellence universities, which had acquired several GS and CoE, received considerably more. While the funding amounts for GS and CoE were quite static in the first funding period and often did not correspond to the different financial needs of the disciplines, the following changes were made in the second funding period (2012–2017/18): GS could apply for 1 to 2.5 million EUR (1.3 to 3.4 million USD) and CoE for 3 to 8 million EUR (4 to 10.8 million USD) per year (DFG 2019a). Finally, in the third funding period (Excellence Strategy), 3 to 10 million EUR (4 to 13.5 million USD) per CoE could be requested (GWK 2016).

Review and Selection Process

The two selection rounds of the AEI and the one of the Excellence Strategy followed a similar procedure. The DFG was responsible for the selection process of GS and CoE, while the German Council of Science and Humanities was in charge of the institutional evaluation of Future Concepts. The review and selection process consisted of several stages. First, all universities could submit outlines. Positively evaluated outlines were invited to submit a full proposal. The evaluation results of the full proposals were then forwarded to a selection committee consisting of academics and science policymakers from the federal government and the sixteen states. While the review of outlines and proposals was mainly done by foreign researchers in panels, the selection committee consisted mainly of German academics (thirty-nine members, some of

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them working abroad) and German science politicians partly from the states (sixteen members) and from the federal government (sixteen members). Thus, in the selection committee, as is usual in science-led procedures in the German research system, the academics had the majority of votes.

The review criteria for the applications were derived from the excellence agreements between the federal government and the states and included, for example, twelve criteria for the CoE in the second selection round of the AEI. The criteria ranged from the quality and originality of the research proposal, the quality of the participating researchers, the promotion of young researchers, various forms of cooperation (national/international, interdisciplinary), knowledge transfer, and gender equality, to strategic university development and managerial skills (Möller et al. 2012, 44). In an online survey, we asked the international reviewers which criteria were most important in forming their opinion about the CoE proposals: "the quality of the research program by international standards" and "the quality of participating researchers" were by far the most important (Möller et al. 2012, 44). The finding shows that despite the many partly competing goals, the classical review criteria ultimately played the key role in decision-making. This indicates that the review process in the AEI was not so different from other scientific competitions in project-based funding.

The relationship between science and politics in the selection committee was not free of conflict. In the first selection round, science policy leaders complained that they had no room for decision-making (Spiegel 2006). During the selection of CoE in 2018, there was an "éclat" (Tagesspiegel 2018). In the first evaluation step, the selection committee agreed to fund forty-seven CoE and rejected forty-one. Ten applications remained, where the opinions were mixed. All of them came from three states in which the Christian Democratic Union (CDU) was in charge. The Federal Ministry of Education and Research, also belonging to the CDU, joined forces with the other Union-governed states to fund the remaining ten candidates. The majority of the states not governed by the CDU and half of the academics voted against this. The result of the majority vote was that the remaining ten CoE also received funding (a total of fifty-seven), even though the federal government and the states had agreed in the 2016 to support a maximum of fifty-five CoE. As the excellence funds were not increased, this decision meant a funding cut of 26 percent per cluster (Tagesspiegel 2018). These examples show that science and politics agreed in the majority of cases, but when the scientific peer review was ambiguous, conflicts of interest arose. The conflicts occurred not only between science and politics, but also between the federal government and the states and the political parties.

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Success Rates

In the first selection round (2006/2007), a total of 580 outlines (253 GS, 280 CoE, and 47 Future Concepts/UoE) were submitted (Möller et al. 2012, 22). Just under one-third of the applicants in the outline phase were invited to submit a full proposal, and about half of the full proposals ultimately received funding. The approval rate (based on outline applications) was 15.4 percent for GS, 13.2 percent for CoE, and 19.1 percent for Future Concepts. In the second selection round (2012), proposal activity in the outline phase dropped by more than half for GS and CoE. One reason was that projects that had already received funding could submit a renewal proposal, and thus skip the outline phase. Despite fewer new applications in the outline phase, the approval rates in 2012 were comparable to the first funding period of the AEI (GS 12.2 percent, CoE 11.2 percent). In contrast, renewal proposals possessed a higher probability of reaching the second funding phase (GS 86.8 percent, CoE 83.8 percent) (Möller et al. 2012, 22). In the third funding line, three of nine UoE lost their status and five new universities were promoted, so that eleven UoE were finally funded. In the Excellence Strategy, sixty-three universities ultimately participated, with a total of 195 CoE outlines. Of the eighty-eight full proposals, fifty-seven CoE were selected (DFG 2019b, 5; DFG 2021a). The funding rate of 29.3 percent was significantly higher than in the two previous selection rounds of the AEI. There are various reasons for this change in application activity and the increase in the approval rate for CoE in the Excellence Strategy. The universities were much better informed and soberly calculated the risk and effort of an application in relation to the return on their investment. The size of the university and its scientific environment also played a decisive role. Twenty-five principal investors had to be specified in the proposals, and smaller universities in particular could hardly achieve this critical mass of renowned researchers in a specific field. Depending on local conditions, other strategies of profiling were therefore sought outside the AEI.

Academic Excellence Initiative and Beyond

In the summer of 2005, the federal government and the states decided not only on the AEI, but also on the Pact for Research and Innovation. This was followed in 2007 by the Higher Education Pact (for details, see Hornbostel and Möller 2015, 14ff). The three pacts continue to exist today, partly under different names (e.g., the Higher Education Pact became the Future Contract for Study and Teaching). Although not immediately recognizable, the three pacts address three key aspects of the German HE and science system: HE research (AEI), HE teaching (Higher Education Pact), and research in the nonuniversity sector (Pact for Research and Innovation). In parallel to the AEI (418

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million EUR (563 million USD) per year), additional funds flowed into the German science system: 321 million EUR (432 million USD) per year through the Higher Education Pact and 280 million EUR (377 million USD) per year through the Pact for Research and Innovation. The three pacts illustrate the spirit of change to provide extra financial resources for the German science system. Furthermore, some federal states initiated smaller excellence programs in order to improve their own competitive position in the national AEI.

What Was New about the AEI?

The funding lines, GS, CoE, and Future Concepts, were new (at least in their names), but the first two were largely inspired by the existing funding formats of the DFG: GS by the Research Training Groups (*Graduiertenkollegs*, duration up to nine years), CoE by the Collaborative Research Centers (*Sonderforschungsbereiche*, duration up to twelve years). They differed from the existing formats primarily in terms of size and funding volume, but less in terms of their fundamental objective of support for young researchers and collaborative research. GS and CoE are significantly larger than their predecessors. The funding line Future Concept—the competition for an overall university strategic concept—represented a new instrument in the German funding landscape and offered a new strategic scope for the universities and their management.

The competitive procedure of the AEIs as such was not new either, as researchers at universities had previously competed for limited research funds, primarily from the DFG. However, a new feature was that the competition between the universities took place at the same time and in intervals of six or seven years. In addition, the joint selection decision by science policymakers and science representatives attracted an unprecedented level of attention. At prime time, on the national news (*Tagesschau*), the German population saw how university rectors rushed onto the stage of a festival hall to thunderous applause, stretching their arms in the air and jumping for joy (Marty 2015, 17). The AEI turned funding decisions into a media spectacle more reminiscent of winning a soccer championship than of ivory tower research. In this orchestration of events, science policymakers were able to make a name for themselves for the measures that they had initiated, and symbolic capital and reputation were distributed to the successful universities. Although the selection decisions of the AEI had always been observed with great excitement and much media attention, the results were not new or surprising.

Looking at the positioning of German universities in various national or international rankings or according to their share in the (subject-normalized) most-cited publications, a relatively stable pattern emerges (Hornbostel and

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Möller 2015, 50). The universities that were successful before the AEI started were also among the winners in the Initiative. The old German top universities are the new UoE. Surprises and disappointments played out in a limited subpopulation of German universities.

In this respect, the AEI does not represent a radical transformation of the German HE system, but rather an incremental change. However, this process can be understood as "transformational leadership," in the sense that individuals and organizations were encouraged to leave the well-trodden path and develop new ideas and approaches. The preconditions for this lay outside AEI, in a change in the legal framework that gave more autonomy to universities.

What Can We Expect from the AEI?

On its own, 4.6 billion EUR (6.2 billion USD) between 2006 to 2017 is a lot of money, but converted to annual spending and in relation to the system as a whole, excellence funding represented only slightly more than 3 percent of the R&D expenditures of the entire HE system (Hornbostel and Möller 2015, 56). One can also illustrate the dimensions with an example: if RWTH Aachen University had received all the excellence funds it was trying to get, it would have been financially equipped in a similar way to Oxford University, but with twice as many students (IEKE 2016, 15). These facts make clear that it was unrealistic from the outset to expect a German Oxford or Harvard to come out of the AEI, even if the mass media speculated about it over and over again (e.g., von Heyden 2011). Such an imbalance between universities in terms of financial resources would not have been politically feasible in the German federal system.

The AEI was accompanied from the very beginning by overblown rhetoric from both its proponents and its opponents. Some proclaimed very early that "the AEI has sustainably changed the German science system and strengthened the country as a research location in international comparison" (Kleiner 2012). The others criticized the AEI for favoring cartel, monopoly, and oligarchy structures (Münch 2009, 453) thus perpetuating elite structures (Hartmann 2006, 464), which ultimately lead to anticompetitive structures. The rhetoric has faded away with the end of the AEI, or rather it has been shifted to Excellence Strategy. The following analysis examines the effects of the German AEI in terms of its financial resources and other nonmonetary dimensions.

Effects of the AEI

Recruitment

A large part of the excellence funds was spent on staff recruitment. In the first years after the start of the AEI, more than 4,000 new positions and fellowships

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were created, including more than 300 professorships (Hornbostel and Sondermann 2009). There were similar increases in staff in the second funding phase of the AEI in 2012, and most recently in 2019, in the Excellence Strategy (DFG 2021b). Since a central goal of the AEI was to promote young researchers, most of the staff funds went to temporary doctoral positions and fellowships, and to a lesser extent to postdocs. This form of recruitment is an indication that many of the effects of the AEI are to be found beyond the realm of top-level research.

Young Academics

Even though GS were seen as the central funding line for young researchers, they accounted for only about a quarter of their positions and fellowships. The Institutional Strategies financed just under another quarter, but more than half of the doctoral students and postdocs worked in CoE (Hornbostel and Sondermann 2009).

Instead of relying solely on individual relationships between a doctoral candidate and a supervisor, the increase of young academics was associated with the establishment of structured doctoral training programs, which support the professional, scientific, and social integration of doctoral students into universities. The structured doctoral training programs themselves were nothing new, but in Germany, where many universities were not even aware of the number of their doctoral students, not to mention the quality of supervision and grading, this was a major reform that had failed for decades due to the internal structures and blockades of the universities. These innovations were accompanied by conflicts over competencies, responsibilities, and organizational forms. One success of the AEI is that the structured promotion of young academics (in contrast to the previous individual doctoral supervision by one professor) is now seen as a basic task for universities, with various formats, in particular both interdepartmental and universitywide GS.

Young researchers who were involved in the AEI praised the excellent working and research conditions. However, they also criticized the lack of sustainable funding, which limits further career opportunities. As a result of the AEI, the number of temporary positions has increased more than the number of permanent positions, especially for professorships (Bukow and Möller 2013, 24). As a consequence, despite the excellent conditions young scientists experienced, the bottleneck of academic careers became tighter and the individual academic careers riskier.

There was also a range of criticism directed at the GS funding line. There was criticism that—with a few exceptions—the thematic focus of GS was too narrow and there was a danger of qualifying beyond what was needed, with

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regard to the HE and business sectors. In contrast to the doctoral training in CoE, the doctoral training in GS was not embedded into collaborative research centers. The stimulating exchange with experienced researchers could not take place adequately within the framework of a funding line that focused specifically on doctoral training.

The International Expert Commission for the Evaluation of AEI ultimately concluded that GS should not be continued as a stand-alone program. Instead, junior researcher training should take place in collaborative research groups or in the smaller format of DFG Research Training Groups (which were the original model) (IEKE 2016, 3, 39–40). The success of GS in implementing structured doctoral training as a core task of universities led to their termination as well. In this respect, the ending of the GS funding line should be understood less as a failure and more as mission accomplished.

Professorial Recruitment

The AEI also led to the appointment of professors, especially in CoE (Bukow and Möller 2013, 10). In the German science system, a distinction can be made between three types of professorships: junior professorships, which are usually limited to six years (abbreviated W1 according to the German salary system), and the regular professorships, which are usually open-ended (W2 and W3). The W3 professorships have the highest income and the best chair endowment. The three professorial job categories roughly correspond to the international distinction between assistant (W1), associate (W2), and full professor (W3).

Of the 300 professorships filled at the start of the AEI, 40 percent were junior professorships (Bukow and Möller 2013, 22). Junior professorships were highly attractive for various reasons. They were seen as an instrument for promoting young researchers, and thus corresponded to an important objective of the AEI. They were cost-effective compared to regular professorships and, like the excellence funds, temporary, so universities did not have to make permanent commitments. Due to AEI, the number of junior professorships in Germany increased significantly (Bukow and Möller 2013, 22).

Not only junior professorships, but also 77 percent of W2 and 21 percent of W3 professorships were temporary at the start of the AEI. This high proportion was atypical for W2/W3 professorships, which are usually permanent. However, about half of the fixed-term positions had a tenure option. Since true tenure-track models were unfamiliar to the German science system until then, there was a proliferation of experimental approaches, ranging from a true tenure track *ad personam* to competitive tenure options, in which junior professors had to compete with each other, or even with external applicants for

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a permanent position (Bukow and Möller 2013). In this respect, the AEI not only brought about an increase in the temporary employment of doctoral students and postdocs, but also extended the fixed-term employment conditions to professorships.

The AEI acted as a catalyst for adopting new ways of recruiting staff, which had already been called for in the German science system (Wissenschaftsrat 2005a) but had hardly been implemented. "The AEI gave us the idea [. . .] to break out of the usual appointment procedure system in the first place," said a university chancellor (Bukow and Möller 2013, 15). This led to open calls for applications without overly detailed denominations, proactive elements, and even (albeit only in a few cases) appointments without job postings. New ways of recruiting professors were mainly used for W1 positions.

Due to the time pressure of the temporary funding, the appointment process for professorships under AEI was accelerated considerably. Whereas at German universities on average only 45 percent of the whole recruitment processes (from advertisement to professorial appointment) were completed within one year, this was the case for 64 percent of the professorships in AEI. W1 positions were the fastest, with an average recruitment time of 10.3 months, followed by W2 with 10.9 months, and finally W3 with 14.1 months (Bukow and Möller 2013, 13). An analysis of the CoE applications revealed that the funded institutions pursued three main goals with professorial recruitment (Bukow and Möller 2013, 13): (1) core areas should gain in performance through new hires to catch up with leading international institutions; (2) neighboring disciplines should be linked by so-called bridge professorships in order to achieve synergy effects; (3) the research spectrum should be complemented beyond the existing expertise to establish new lines of research. More than half of the professors were recruited from abroad, but half of those had German citizenship.

Funding at the Top or across the Board?

In media reporting on AEI, the few UoE (nine in the first and eleven in the second funding phase) played a prominent role (Marty 2015). However, the AEI was not a funding instrument for a few universities, especially due to the other two funding lines (GS and CoE). As shown previously, 39 percent of German universities were successful in the first funding period of the AEI and 51 percent in the second. The proportion increases if only those universities that have a notable research output in the form of at least 100 papers per year (measured by Scopus) are considered. Accordingly, no longer only 39 percent, but almost 60 percent of all German universities were successful in the first round of the AEI (Hornbostel and Möller 2015, 52). This finding does not seem to fit with

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a funding program designed for excellence. However, the AEI had as its goal both "the formation of peaks" and the "raising of the quality of the German higher education and science system across the board" (Exzellenzvereinbarung 2005, 2009, respectively). The goal of the funding seems contradictory at first glance. This is partly the result of a science policy negotiation process in a federal system in which as many states and universities as possible should have access to the funds. The goals also reflect the observation that universities are rarely excellent as a whole, but often only in parts.

The AEI aimed to develop excellence and make it more visible (Exzellenzvereinbarung 2005, 2009). If the assumption is correct that universities are excellent in parts, then these peaks should also be measurable. A bibliometric analysis investigates the research performance of CoE in comparison to the German university sector and the German science system (Möller, Schmidt, and Hornbostel 2016). The so-called excellence rate was used as an indicator, determining what percentage of the publications of a unit belongs to the world's 10 percent most-cited papers in its respective field. The excellence rate of publications from CoE (25.9 percent) is significantly higher than the excellence rate of all publications from Germany (14.4 percent) or all publications from the German HE institutions (14.3 percent). Within the HE sector, the excellence rate increased with the increased success of the AEI. The excellence rate of universities that did not receive excellence funding is lowest, at 12.8 percent. Universities with at least one GS or CoE had an average excellence rate of 15 percent, and the Excellence Universities (defined as having success in all three funding lines) had an excellence rate of 16.4 percent. The findings show that there are differences in the performance of the university groups. The high excellence rate of CoE (25.9 percent) also makes it clear that there are centers of top-level research within the universities that differ significantly from the university average and are even higher than the excellence rate of the Max Planck Society (22.6 percent). It can be assumed that these peaks already existed and did not form in a relatively short period of time as a product of the AEI. However, the merit of the CoE funding was to make these peaks more visible within the universities and to strengthen them with additional resources.

Stratification through the AEI?

The different excellence rates of the university groups indicate a stratification of the German university system into stronger and weaker research universities. The question arises whether this stratification was a result of the AEI or already existed. Various results show that the latter is the case. For example, based on a comparison of the DFG funding rankings with and without excellence funding, it is clear that there were no significant changes in the ranking

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of universities as a result of excellence funding (DFG 2012, 76). Bibliometric analyses at the university level also show that there was already a stratification into stronger and weaker research universities before the AEI (Hornbostel and Möller 2015, 50).

Even if stratification in the German HE system was not caused by the AEI, the question is whether the initiative has reinforced this stratification. Have universities not funded in the AEI now been left behind? The results available so far indicate that this is not the case. The DFG Funding Atlas 2015, which focused on the AEI, shows that the spread between the universities with the highest third-party funding and the weakest actually decreased during the period under review (DFG 2015, 61). Current data from the DFG Funding Atlas 2018 confirm that there is no drifting apart of HE institutions, but rather a stabilization of the distribution of third-party funding in the German HE system (DFG 2018, 50).

Another study shows that the university groups with and without excellence funding were able to increase their absolute third-party funding income at roughly the same level between 2005 and 2012 (Möller 2018, 6). Looking at the third-party funding ratio of R&D expenditures (see table 9.2), the entire university sector increased from 39 percent in 2005, the last year before the start of excellence funding, to 49 percent in 2012. Although the universities that received excellence funding have higher third-party funding ratios, the non-funded universities also increased their ratios more significantly, reducing the gap to the UoE.

The findings indicate that the AEI did not lead to stronger stratification of the German HE system. This may be because annual excellence funds accounted for only 3 percent of the total R&D expenditures of the HE sector. On the other hand, the universities not funded in the AEI seem to have tapped other sources of third-party funding and thus counteracted stronger stratification. This is also indicated by the results of Buenstorf and Koenig (2020), who

Table 9.2
Share of third-party funding in R&D expenditures differentiated by university groups according to their success in the AEI

Year	German Universities	UoE	Universities with Excellence Funding	Universities without Excellence Funding
2005	39%	51%	44%	31%
2012	49%	58%	52%	44%
Difference	*10%*	*7%*	*8%*	*13%*

Source: Authors' data and calculations; for details, see Möller (2018).

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found that the unequal distribution of excellence funds between the universities could be partly compensated for by funds from other donors.

If we look not only at the leading Anglo-American universities in the international university rankings, but at the US HE system as a whole, we see that it is more stratified than in Germany. While there are many HE institutions in the US that are clearly stronger in research, there are also a great number that perform significantly worse than German universities (Hornbostel and Möller 2015, 54). Comparing the German HE system with the Dutch system shows that the latter is less stratified than the German system, but overall it is more research intensive. These two examples illustrate that stratification cannot be an aim in itself. Rather, the performance and functionality of the HE system as a whole must be kept in mind if one is interested in improving the performance of more than just a few HE institutions.

Comparing the results of the bibliometric analyses before and after the start of the AEI, we observe an upward effect that has led to an increased excellence rate at the level of the individual universities and at the level of the system as a whole (Hornbostel and Möller 2015, 49–50). Has the AEI thus achieved its goal of raising quality across the board (Exzellenzvereinbarung 2005, 2009)? The upward effect can be attributed only partially to the AEI. A longer-term trend can be observed that began even before the AEI and continues in an approximately linear way, without any increases or even sudden changes after the start of the AEI (Hornbostel and Möller 2015, 56). Here again, it is evident that the financial resources of the AEI were too small in relation to the entire HE sector to measure substantial changes in the overall system.

Changes in Organizational Governance due to the AEI

The AEI started with the claim to be a "competition of ideas for research and strategies" (DFG 2005). In the first funding period, forty-seven outlines for university Future Concepts were submitted to the German Council of Science and Humanities. The chairman of the council, Karl Max Einhäupl, was "delighted with the variety of ideas that German universities have come up with to improve their research" (Wissenschaftsrat 2005b, 1). In the second funding period of the AEI, twenty-two universities submitted outlines for Future Concepts (DFG and WR 2011), not including the nine UoE that had already been selected for the full application round. Finally, in the follow-up initiative, Excellence Strategy, all universities that had submitted a CoE proposal had to supplement it with a less comprehensive "overall concept of the university on their strategic orientation" (DFG 2017). Shortly after the start of the AEI, initial studies showed that innovation had arrived in the universities and had been taken

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up by them (Sondermann et al. 2008). In a way, the "free painting" propagated by the DFG at the beginning sent a signal criticizing the growing risk aversion and corresponding decline in innovation potential.

The AEI triggered a spirit of optimism in German HE institutions, in which universities and their management increasingly took on the role of formative actors and initiators. The AEI gave the impetus (beyond legislative reforms) to debate about appropriate governance structures and institutional profile building. Criticism focused on the insufficient autonomy of universities, the lack of professionalism in administration, the sluggish and conservative collegial decision-making structures and cultures, a correspondingly poor internal governance capacity, and a weak institutional self-image. Reforms in these areas had already been initiated in some German states, more or less ambitiously, but mostly without significant success. The AEI unleashed a new wave of reform.

This development was not without conflict. Different strategies were pursued at the universities, and long-term structural changes had to be weighed against short-term calculations. This resulted in internal conflicts over short- and long-term funding commitments and reallocations. With the start of the AEI, GS and CoE came on the scene as additional actors, seeking and often having to fight for their place in the university hierarchy. Through nonuniversity partners, external interests and expectations were also brought to the universities. These were reflected, for example, in professorial recruitment and in claims to seats on appointment committees (Simon and Sondermann 2009). According to the International Expert Commission for the Evaluation of the AEI, the impact of the initiative has been ambivalent. The third funding line (Future Concept) triggered a wide range of reforms, both at the universities and in the science policy of the states. However, CoE, with their own budgets, led to autonomous subdivisions within the universities, which tended to run counter to central strategic management. Overall, according to the Internationale Expertenkommission Exzellenzinitiative (IEKE; International Expert Commission for the Evaluation of the AEI), "there is still a great deal of untapped potential and a substantial need to catch up at German universities" (2016, 23).

The professionalization of university administrations was praised by some as a gain in competence and the strategic ability to act and criticized by others as superfluous, or even obstructive bureaucratization. The financially strong excellence projects, especially CoE, have often weakened the role of the departments and deans. In this respect, deans are more skeptical about the AEI than the rest of the professoriat. This is due, among other things, to lack of sustainability of the temporary excellence funding and the high application and

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administrative costs, which are at the expense of other research areas and teaching and lead to the solidification of intra-university differences (Johann, Möller, and Neufeld 2016, 22).

The findings of several online surveys conducted by the German Centre for Higher Education Research and Science Studies (*Deutsche Zentrum für Hochschul- und Wissenschaftsforschung*—DZHW) show that academics have a divided view of the AEI and the Excellence Strategy. At smaller and medium-sized universities, and at universities that have never been a UoE, the impact of the excellence program was predominantly assessed negatively. At the larger universities and UoE, the academics saw overwhelmingly positive effects. In addition, 38 percent of all researchers and 19 percent of professors said that they were unable to form a final judgment (Ambrasat and Heger 2020, 41).

Earlier surveys had shown that scientists who had not submitted any third-party funding applications in the previous five years were particularly negative about the Excellence initiative. With increasing application activity, the critical assessment of the AEI decreases (Johann et al. 2016, 23). In other words, the evaluation of the AEI depends on the application activity and experience with competitive third-party funding procedures. These findings suggest that at least some of the critical attitudes originate from a fundamental rejection of competitive funding procedures in the HE system.

From the universities' point of view, the costs and risks of participating in the AEI include not only the financial and organizational effort required for the application, the potential internal conflicts arising from more funding for projects of excellence, their relative autonomy within the university and, in some cases, long-term commitment of cofunding, but also the risk of not being able to defend the prestigious title of Excellence University in the context of renewal applications. The University of Freiburg, the University of Göttingen, and the Karlsruhe Institute of Technology experienced such a loss of title in 2012, partly because the formal criteria were no longer met (at least one GS and one CoE were required to be eligible to compete in the Future Concept funding line) and partly because the projects implemented did not meet the expectations of the reviewers. For those affected, this meant not only the loss of financial resources, but also a demotivating effect for university staff and a loss of prestige and reputation publicized by the mass media. Only the Karlsruhe Institute of Technology managed to regain the lost title of Excellence University in 2019.

Governance in the German HE and Science System

Nearly in parallel to the AEI, the Pact for Research and Innovation was adopted. Although the AEI and the Pact for Research and Innovation essentially pursue

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the same goals, different funding and governance mechanisms were applied. The AEI is based on the idea of competition, while the Pact for Research and Innovation takes place in the context of a target agreement. In the AEI, temporary third-party funds are allocated without planning security, while in the Pact for Research and Innovation, there is an annual increase in basic funding of between 3 percent and 5 percent per year to establish planning security.

Why do German science policymakers pursue the same goals with different forms of governance and funding? Part of the explanation lies in the path dependency of funding. Research funding for the universities has generally been distributed competitively on the basis of proposals (e.g., from the DRG), while funding for the nonuniversity research sector is ensured by the Joint Science Conference of the federal government and the states. This has different consequences. While third-party funding ratios at universities are rising (see table 9.2), those at nonuniversity institutions remain stable (Möller 2018). In 2012, the third-party funding ratio was 58 percent for UoE and 44 percent for universities not supported by the Excellence Program. However, the organization with the most research impact in Germany, the Max Planck Society, has a third-party funding ratio of only 16 percent (Möller 2018). The question arises whether focusing on competition is always appropriate for building research excellence or whether, as the example of the Max Planck Society shows, different paths lead to the same goal.

Obviously, different governance models and, in particular, a mixture of sufficient basic funding and a range of externally competitive funds can support a differentiated research system better than a purely competitive culture fixated solely on market mechanisms. At least in some German states, new approaches to funding and governance have been considered. The state of Baden-Württemberg, for example, has decided to increase the basic funding of its HE institutions by 3 percent, analogous to the Pact for Research and Innovation (Ministry of Science, Research and the Arts, Baden-Württemberg 2015, 6), to grant more autonomy and flexibility and to support institutional strategies and profile building. A number of scientific studies conclude that autonomy and financial empowerment ultimately increase the chances of obtaining competitive funding (Aghion et al. 2010; de Boer et al. 2010).

Increased Cooperation between University and Nonuniversity Research

In 1999, in the context of an evaluation of the German science system, it was stated that there is a "tendency towards segmentation" (Systemevaluation 1999, 7). The call at that time for an improvement of the "exchange between nonuniversity research institutions and the universities as the foundation of the

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[German] research system" (Systemevaluation 1999, 10) ultimately became an objective of the AEI (Exzellenzvereinbarung 2005).

Increasing cooperation between university and nonuniversity research institutions has been observed since the beginning of the AEI; for example, a large number of nonuniversity institutions were named as cooperation partners in the proposals for excellence. A bibliometric study showed that there has been an increase in joint publications between university and nonuniversity research since the start of the AEI (Hornbostel and Möller 2015, 44). Looking only at the publications of CoE, the Max Planck Society is by far the largest cooperation partner, followed by the Helmholtz Association and the Leibniz Association (Hornbostel and Möller 2015, 46). In addition, the number of joint appointments of professors doubled to 1,315 in the period from 2005 to 2019 (GWK 2020, 56). On the basis of different contract models, these professors work both at universities and at nonuniversity research institutions.

However, attributing these effects solely to the AEI falls short of the mark. At about the same time as the Excellence initiative started, the Pact for Research and Innovation was launched, which was designed to promote nonuniversity research and also pursues the goal of breaking up the pillarization (*Versäulung*) of the German research system. For example, the Helmholtz Association established Helmholtz Institutes at universities and built research campuses with a view to strategic collaborations with universities (GWK 2020, 22, 59). It is difficult to decide which federal and state-funded program has had a greater impact on increased collaboration between universities and nonuniversity research.

Conclusion

The AEI has triggered heated debates about the future of the German research and the HE system. Proponents and critics alike often overestimated the impact of the initiative. While some expected an "unleashing" of German universities, with leaps in performance and international visibility of some elite institutions, others feared the formation of antiscience cartel structures. In fact, there have been no leaps of German universities in the international university rankings or their performance in one direction or the other. Nor have the critics' fears been realized. However, this does not mean that the AEI was ineffective. It was (and is) not only a funding program, but also a communication channel. This applies to communication within and among research institutions, as well as to public communication about the performance of universities. This—together with national and international rankings—has

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transformed the informal hierarchy of German universities into one of public visibility, with no decisive change in the hierarchy itself.

The AEI provided additional money to the German university system, but in relation to the entire system, it was too little to allow for great changes. The measurable effects of the AEI include a moderate acceleration of a longer-term trend toward more internationally recognized research performance and the visibility of particularly high-performing units in universities. Less measurable are the soft, but perhaps equally important, effects of the AEI. These include a change of mood, which, due to media attention, has triggered a new corporate identity for the universities and promoted cooperative structures within and beyond the universities, with a strong focus on performance. Accompanied by controversy, this broad mobilization effect has challenged a plethora of status quo–conserving practices and regulations within universities and led to many changes, including an intense debate about research quality and the limits of increasing the culture of competition. While not much has remained of the radicalism of the initial plan, it has been possible to transfer the spirit of the AEI to the nonfunded universities. However, this was possible only through a variety of compensatory measures and programs, which at least prevented a greater differentiation of the universities' financial resources. As a result of this development, university research in Germany is becoming increasingly dependent on temporary, third-party funding. This bears the risk that university research strategies will be guided by the next major grant, rather than a long-term concept that could be financed by the limited resources of basic funding.

One of the unanswered questions is whether the ratio of effort for the competitive procedure and the preparation of applications to the return is reasonable. In the first two funding periods of the AEI, more than 1,100 applications (both outlines and full proposals) were submitted (Möller et al. 2012, 22). The proposals had to be written, coordinated with a large number of researchers, administratively processed within the universities and funding agencies, and peer-reviewed by hundreds of outstanding international researchers. Decades worth of work and the research time of top researchers went into this process. For those who received funding, the return on investment was worthwhile, but for the unsuccessful applicants, the record is less clear. Some succeeded in implementing the planned projects and reforms even without funding from the AEI, while others failed to implement planned measures. In this respect, the great effort for the initial phase was certainly justified. For long-term development, however, it will be necessary to think about how the effort required for application and evaluation can be reduced.

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References

Note: All electronic sources were accessed on September 10, 2021.

Aghion, Philippe, Mathias Dewatripont, Caroline Hoxby, Andreu Mas-Colell, and André Sapir. 2010. The governance and performance of universities: Evidence from Europe and the US. *Economic Policy* 25: 7–59. https://doi.org/10.1111/j.1468-0327.2009.00238.x.

Ambrasat, Jens, and Christophe Heger. 2020. Barometer für die Wissenschaft. *Ergebnisse der Wissenschaftsbefragung 2019/20*. Berlin: Deutsches Zentrum für Hochschul- und Wissenschaftsforschung GmbH (DZHW). https://www.wb.dzhw.eu/downloads/wibef_barometer2020.pdf (in German).

Buenstorf, Guido, and Johannes Koenig. 2020. Interrelated funding streams in a multi-funder university system: Evidence from the German exzellenzinitiative. *Research Policy* 49 (3): 103924. https://doi.org/10.1016/j.respol.2020.103924.

Bukow, Sebastian, and Torger Möller. 2013. *Die Rekrutierung wissenschaftlichen Spitzenpersonals in der Exzellenzinitiative*. Berlin: iFQ. http://www.forschungsinfo.de/Publikationen/Download/bukow_moeller_rekrutierung.pdf (in German).

Bundesministerium für Bildung und Forschung (BMBF). 2019. *Exzellenzstrategie*. Berlin: BMBF. https://www.bmbf.de/bmbf/de/forschung/das-wissenschaftssystem/die-exzellenzstrategie/die-exzellenzstrategie.html (in German).

de Boer, Harry F., Benjamin W. A. Jongbloed, Jürgen Enders, and Jonathan M. File. 2010. Progress in higher education reform across Europe, funding reform, Volume 1: Executive summary and main report. Enschede: Center for Higher Education Policy Studies (CHEPS). http://doc.utwente.nl/88692/.Deutsche Forschungsgemeinschaft (DFG). 2015. *Förderatlas 2015. Kennzahlen zur öffentlich finanzierten Forschung in Deutschland*. Bonn, Germany: Deutsche Forschungsgemeinschaft (DFG) (in German).

Deutsche Forschungsgemeinschaft (DFG). 2017. *Förderlinie Exzellenzcluster. Hinweise und Muster für die Antragstellung*. Bonn, Germany: Deutsche Forschungsgemeinschaft (DFG). https://www.dfg.de/formulare/exstra130/exstra130_de.pdf (in German).

Deutsche Forschungsgemeinschaft (DFG). 2018. *Förderatlas 2018: Kennzahlen zur öffentlich finanzierten Forschung in Deutschland*. Bonn, Germany: Deutsche Forschungsgemeinschaft (DFG). https://onlinelibrary.wiley.com/doi/book/10.1002/9783527817818 (in German).

Deutsche Forschungsgemeinschaft (DFG). 2019a. *Exzellenzinitiative des Bundes und der Länder*. Bonn: DFG. https://www.dfg.de/foerderung/programme/exzellenzinitiative/index.html (in German).

Deutsche Forschungsgemeinschaft (DFG). 2019b. *Exzellenzstrategie des Bundes und der Länder. Statistische Übersichten zu den Förderentscheidungen zu Exzellenzclustern*. Bonn, Germany: Deutsche Forschungsgemeinschaft (DFG). https://www.dfg.de/download/pdf/dfg_im_profil/geschaeftsstelle/publikationen/studien/bericht_exstra_foerderentscheidungen_de.pdf (in German).

Deutsche Forschungsgemeinschaft (DFG). 2021a. *Exzellenzstrategie des Bundes und der Länder*. Bonn, Germany: Deutsche Forschungsgemeinschaft (DFG). https://www.dfg.de/foerderung/programme/exzellenzstrategie/index.html (in German).

Deutsche Forschungsgemeinschaft (DFG). 2021b. *Von null auf hundert? Personalaufbau in Exzellenzclustern*. Bonn, Germany: Deutsche Forschungsgemeinschaft (DFG). https://www.dfg.de/download/pdf/dfg_im_profil/geschaeftsstelle/publikationen/infobriefe/ib02_2021.pdf (in German).

Deutsche Forschungsgemeinschaft (DFG), and Wissenschaftsrat (WR). 2011. *Erste Entscheidungen in der zweiten Phase der Exzellenzinitiative des Bundes und der Länder* [Pressemeldung]. https://www.wissenschaftsrat.de/download/archiv/pm_1111.pdf?__blob=publicationFile&v=4 (in German).

Downloaded from http://direct.mit.edu/books/book-pdf/2218384/book_9780262376693.pdf by guest on 18 November 2024

Dobbins, Michael. 2012. How market-oriented is French higher education?. *French Politics* 10 (2): 134–159.

Exzellenzvereinbarung. 2005. *Bund-Länder-Vereinbarung gemäß Artikel 91 b des Grundgesetzes (Forschungsförderung) über die Exzellenzinitiative des Bundes und der Länder zur Förderung von Wissenschaft und Forschung an deutschen Hochschulen*. https://www.gwk-bonn.de/fileadmin/Redaktion/Dokumente/Papers/exzellenzvereinbarung.pdf (in German).

Exzellenzvereinbarung. 2009. *Verwaltungsvereinbarung zwischen Bund und Ländern gemäß Artikel 91 b Abs. 1 Nr. 2 des Grundgesetzes über die Fortsetzung der Exzellenzinitiative des Bundes und der Länder zur Förderung von Wissenschaft und Forschung an deutschen Hochschulen*. https://www.gwk-bonn.de/fileadmin/Redaktion/Dokumente/Papers/Exzellenzvereinbarung-II-2009.pdf (in German).

Gemeinsame Wissenschaftskonferenz (GWK). 2014. *Steigerung des Anteils der FuE-Ausgaben am nationalen Bruttoinlandsprodukt (BIP) als Teilziel der Strategie Europa 2020. Sachstandsbericht 2011 zum 3%-Ziel für FuE*. Bonn, Germany: GWK. https://www.gwk-bonn.de/fileadmin/Redaktion/Dokumente/Papers/GWK-Heft-36-Strategie-Europa-2020.pdf (in German).

Gemeinsame Wissen- schaftskonferenz (GWK). 2016. *Verwaltungsvereinbarung zwischen Bund und Ländern gemäß Artikel 91b Absatz 1des Grundgesetzes zur Förderung von Spitzenforschung an Universitäten—"Exzellenzstrategie."* Bonn, Germany: GWK. https://www.gwk-bonn.de/fileadmin/Redaktion/Dokumente/Papers/Verwaltungsvereinbarung-Exzellenzstrategie-2016.pdf (in German).

Gemeinsame Wissenschaftskonferenz (GWK). 2020. *Pakt für Forschung und Innovation. Monitoring-Bericht 2020*. Bonn, Germany: GWK. https://www.gwk-bonn.de/fileadmin/Redaktion/Dokumente/Papers/GWK-Heft-68_Monitoring-Bericht-2020-Band_I.pdf (in German).

Hartmann, Michael. 2006. Die Exzellenzinitiative. Ein Paradigmenwechsel in der deutschen Hochschulpolitik. *Leviathan* 34: 447–465 (in German).

Hochschulkompass. 2021. https://www.hochschulkompass.de/en/home.html (in German).

Hornbostel, Stefan, and Michael Sondermann. 2009. Dynamische Entwicklung. Stand der Personalrekrutierung bei der Exzellenzinitiative. *Forschung & Lehre* 4: 264–265 (in German).

Hornbostel, Stefan, and Torger Möller. 2015. *Die Exzellenzinitiative und das deutsche Wissenschaftssystem. Eine bibliometrische Wirkungsanalyse*. Berlin: Berlin-Brandenburgische Akademie der Wissenschaften. https://edoc.bbaw.de/files/2445/BBAW_WiD12_edoc.pdf (in German).

Internationale Expertenkommission Exzellenzinitiative (IEKE). 2016. *Internationale Expertenkommission zur Evaluation der Exzellenzinitiative. Endbericht*. Berlin: Internationale Expertenkommission Exzellenzinitiative (IEKE). https://www.gwk-bonn.de/fileadmin/Redaktion/Dokumente/Papers/Imboden-Bericht-2016.pdf (in German).

Johann, David, Torger Möller, and Jörg Neufeld. 2016. Gut für Projektionen. *Duz* 8: 22–23 (in German).

Kleiner, Matthias. 2012. "Entscheidungen in der zweiten Phase der Exzellenzinitiative" [Pressekonferenz] (in German).

Marty, Christoph. 2015. *Wissenschaftskommunikation zur Exzellenzinitiative. Oder vom Beobachten des Beobachters der Beobachter* (doctoral dissertation). Berlin: Humboldt-Universität zu Berlin. https://doi.org/10.18452/17638 (in German).

Ministry of Science, Research and the Arts, Baden-Württemberg. 2015. *Perspektive 2020 Hochschulfinanzierungsvertrag Baden-Württemberg 2015–2020*. Baden-Württemberg, Germany: Ministry of Science, Research and the Arts Baden-Württemberg. https://mwk.baden-wuerttemberg.de/fileadmin/redaktion/m-mwk/intern/dateien/publikationen/411503_MWK_Infografiken_Broschuere_RZ_onl.pdf (in German).

Möller, Torger. 2018. Same objectives, different governance—How the AEI and the Pact for Research and Innovation affect the German science system. *Fteval Journal for Research and Technology Policy Evaluation* 45: 4–8. https://doi.org/10.22163/fteval.2018.280.

Möller, Torger. 2019. *Governance und Performanz von Forschung. Wissenschaftssysteme und ihre Organisationen im internationalen Vergleich*. Hannover, Germany: DZHW (in German).

Downloaded from http://direct.mit.edu/books/book-pdf/2218384/book_9780262376693.pdf by guest on 18 November 2024

Möller, Torger, Philip Antony, Sybille Hinze, and Stefan Hornbostel. 2012. Exzellenz begutachtet. Befragung der Gutachter in der Exzellenzinitiative. iFQ-Working Paper 11. http://www.forschungsinfo.de/Publikationen/Download/working_paper_11_2012.pdf (in German).

Möller, Torger, Marion Schmidt, and Stefan Hornbostel. 2016. Assessing the effects of the German AEI with bibliometric methods. *Scientometrics* 109: 2217–2239. https://doi.org/10.1007/s11192-016-2090-3.

Münch, Richard. 2009. Kein Kartell, kein Monopol, keine Oligarchie? *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 61: 453–461 (in German).

Nowotny, Helga. 2012. *Auf der Suche nach Exzellenz: wieviel Evaluierung verträgt das Wissenschaftssystem? (Göttinger Universitätsrede—Wissenschaft verantworten)*. Göttingen, Germany: Wallstein (in German).

Simon, Dagmar, and Michael Sondermann. 2009. Harmonie trotz Hierarchie. Zur Integration von Exzellenzclustern in Hochschulen. *Duz* 7: 20–21 (in German).

Simon, Dieter. 1991. Die Universität ist verrottet. *Der Spiegel* 50. https://www.spiegel.de/spiegel/print/d-13491471.html (in German).

Sondermann, Michael, Scholz, Anne-Maria, Dagmar Simon, and Stefan Hornbostel. 2008. Die Exzellenzinitiative: Beobachtungen aus der Implementierungsphase. iQF-Working Paper 5. http://www.forschungsinfo.de/Publikationen/Download/working_paper_5_2008.pdf (in German).

Spiegel. 2004. "Elite-Unis. Castingshow mit Edelgard." *Spiegel Online*, January 26, 2004. http://www.spiegel.de/unispiegel/studium/elite-unis-castingshowmit-edelgard-a-283607.html (in German).

Statistisches Bundesamt (Destatis). 2020. *Bildung und Kultur. Personal an Hochschulen 2019 [Fachserie 11 Reihe 4.4.]*. Wiesbaden, Germany: Statistisches Bundesamt (Destatis) (in German).

Statistisches Bundesamt (Destatis). 2021a. *Ausgaben, Einnahmen und Personal der öffentlichen und öffentlich geförderten Einrichtungen für Wissenschaft, Forschung und Entwicklung 2019. [Fachserie 14 Reihe 3.6.]*. Wiesbaden, Germany: Statistisches Bundesamt (Destatis) (in German).

Statistisches Bundesamt (Destatis). 2021b. *Bildung und Kultur. Finanzen der Hochschulen 2019. [Fachserie 11 Reihe 4.5.]*. Wiesbaden, Germany: Statistisches Bundesamt (Destatis) (in German).

Systemevaluation. 1999. *Forschungsförderung in Deutschland. Bericht der internationalen Kommission zur Systemevaluation der Deutschen Forschungsgemeinschaft und der Max-Planck-Gesellschaft*. Hannover, Germany: Scherrer Druck Neue Medien. https://www.mpg.de/233502/forschungsfoerderung-deutschland.pdf (in German).

Tagesspiegel. 2018. "Berliner Unis sind fürs Elitefinale qualifiziert. Vorentscheidung in der Exzellenzstrategie gefallen." *Tagesspiegel*, September 27, 2018. https://www.tagesspiegel.de/wissen/vorentscheidung-in-der-exzellenzstrategie-gefallen-berliner-unis-sind-fuers-elitefinale-qualifiziert/23120066.html (in German).

von Heyden, Wedig. 2011. Wir brauchen unser eigenes Oxford. *Die Zeit* 7. https://www.zeit.de/2011/07/C-Bundesfoerderung (in German).

Wintermantel, Margret. 2008. Profilbildung und Exzellenzinitiative. Perspektiven der Differenzierung im deutschen Hochschulsystem. In *Exzellente Wissenschaft. Das Problem, der Diskurs, das Programm und die Folgen*, edited by Stefan Hornbostel, Dagmar Simon, and Saskis Heise, 93–96. Bonn, Germany: iFQ—Institut für Forschungsinformation und Qualitätssicherung (in German).

Wissenschaftsrat (WR). 2005a. *Empfehlungen zur Ausgestaltung von Berufungsverfahren [Drs. 6709–05]*. Cologne, Germany: Wissenschaftsrat (WR). https://www.wissenschaftsrat.de/download/archiv/6709-05.pdf?__blob=publicationFile&v=1 (in German).

Wissenschaftsrat (WR). 2005b. *Exzellenzinitiative: Wissenschaftsrat beeindruckt von Antragsskizzen für Zukunftskonzepte [Pressemeldung]*. Cologne, Germany: Wissenschaftsrat (WR). https://www.wissenschaftsrat.de/download/archiv/pm_2605.pdf?__blob=publicationFile&v=2 (in German).

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10

A Project for the Elite That Changed the System as a Whole: A Case Study of Project 5–100

Andrey Volkov, Yaroslav Kuzminov, and Maria Yudkevich

Context

Introduction

The last thirty years have been a period of systemic changes in the Russian higher education (HE) system, caused by the transition from a planned to a market economy and the associated transformation of institutions in almost all spheres of Russian life, as well as by a change in the state's approaches to managing HE. While the current system reflects the market orientation of the national economy, it retains several features inherited from the Soviet system. The confusion of these new and old features determines many of the peculiarities of how universities are organized and how they work in modern Russia.

A number of changes during this period affected the entire HE system. These include the formation in 1992 of private HE institutions and the transition in 2009 from university-specific entrance examinations to a unified state examination. In addition, a range of state policy measures were introduced concerning the leading universities and the institutionalization of this segment. From 2006 to 2014, ten universities, each of which was created by merging several universities—sometimes forcibly—received the status of "federal university." In 2008, a program of "national research universities" was launched, which awarded, on a competitive basis, the corresponding status to twenty-nine universities. In 2013, an academic excellence initiative (AEI) called the Global Competitiveness Enhancement Program was launched, the goal of which was—as indicated by the decree of Vladimir Putin, the Russian president, and the very name of the initiative—the entry of at least five universities into the top 100 in the world by 2020. This program, called Project 5–100, is the subject of this chapter.

This discussion is structured as follows. First, we briefly describe the main parameters and features of the Russian HE system that laid the groundwork

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for Project 5–100. In the second section, we describe the project's design and the reasons behind it. The design includes the principles for the selection of universities and for decision-making during the program. In particular, we describe the key metrics to measure the performance of universities and the role of the International Council in assessing these results. The third section describes the results and effects of the program—how it affected the participating universities and the changes it caused in the HE system overall. In the conclusion, we discuss the challenges that the next AEIs may face and describe the principles underlying a new program (called Priority 2030) and the first steps in its implementation.

The Russian HE System

As of September 2022, there were 722 private and public universities in Russia. The public sector is the largest, where about 91 percent of students study in 500 universities and where 95 percent of faculty are employed (with 3.24 million students in four- or five-year programs among 3.74 million students in total). Most universities that provide high-quality education are in the public sector (Kuzminov and Yudkevich 2022).

The current system inherited the relative autonomy of the HE and research sectors from the Soviet period, the latter represented by the Russian Academy of Sciences (RAS). Until recently, most HE institutions, including many universities, were focused on teaching, while research was carried out at dedicated scientific institutions. In 2012, before the start of Project 5–100, the share of university publications was about 50 percent of all publications in the country and 34 percent of publications were included in the world's top-cited publications;[1] 8.5 percent of government spending went to scientific research;[2] and most scientific staff (59 percent) were concentrated in RAS scientific institutes.[3] The current growth of research in universities (which is almost entirely related to the state segment) is taking place against a background of continuing institutional autonomy—mitigated, however, by the growth of cooperation between researchers from universities and RAS institutes.

In the Soviet-era planned economy, universities were funded by the state on a budget severely rigid in its allocation. The project approach, and even the very idea of development (as opposed to growth) in the early 2010s, were still alien to most universities, stemming from a lack of finances for development and an acute lack of understanding of the directions and tools for such development.

Traces of the rigid sectoral industrial structure persist in HE institutions. Although about 44 percent of state universities are subordinate to the Ministry of Education and Science, the rest are under the jurisdiction of sectoral

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ministries—health, agriculture, defense, sports, and others. In Soviet times, universities associated with sectoral ministries were specialized, training workers for the relevant industries. Today, most specialized universities have been transformed into multidisciplinary universities, but technical areas remain central to them in terms of funding. The new directions they open, as a rule, are more demand dependent.

The territorial distribution of universities is uneven—206 (almost 30 percent) are in either Moscow or St. Petersburg. Russia's large land area and the very low population density in a number of regions lead to the absence of urban communities, which could stimulate universities to fully benefit their region.

In general, universities are significantly segmented in terms of the quality of education and selectivity: the average score of the unified state exam among freshmen, according to which selection to universities is carried out, is above 80 out of 100 in 95 universities (about 20 percent), and is in the range of 60–80 in 296 universities (60 percent).[4] The best HE is associated with studying either in Moscow or St. Petersburg, or in one of several large regional centers.

By the time Project 5–100 was launched, the level of internationalization of most universities was minimal. In 2012, about 6 million students studied at Russian universities; 2 percent of students were from post-Soviet countries. The relatively few faculty attracted from the international labor market worked at only a few universities, and their share in the total number of academic staff was negligible. Many of them worked on relatively short contracts and often only part time. The level of English proficiency among faculty did not allow most of them to conduct classes in English, read the academic literature, or communicate on professional topics with colleagues.

The Context of Project 5–100

In the Soviet period, all universities were state funded according to a formula that has largely been preserved to this day. Better-performing universities receive about as much per student as weaker ones (up to coefficients that often do not play a significant role). The funding was tied to the number of students (i.e., for current educational activities, not university development).

How was the transformation of Russian HE institutions into real universities, making conducting research and training future academic staff important parts of their mission, to be achieved? The answer was not, for example, simply to introduce additional identical key performance indicators (KPIs) for all universities, which were too numerous and too diverse in their capacity and potential. Such a transformation, and its focused financial support, were limited to a small number of universities that were willing and able to undergo substantial and rapid transformation. These issues were not understood by the

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entire university community. Only a narrow group of project initiators understood the obstacles to development and the need for the program. Relying on help from progressive officials, they played an important role in launching the program. A key limitation to understanding was the almost complete lack of international experience that would reveal institutional opportunities and alternatives, including organizational changes. At that time, few people in the Russian HE system understood what world-class universities were or what a research university was.

Only a small group of universities could make such radical changes and develop (or grow), so the idea was that the program would have flow-on effects: the flagship universities moving faster, the other participating universities following, and the universities outside the program adopting appropriate best practices, rethinking their markets and comparative advantages, and making other improvements.

Project 5–100 and Its Impact on the HE System

Project 5–100 Objectives and the Selection of Universities

Project 5–100 was launched in 2013 as an eight-year program meant to increase the global competitiveness of leading Russian universities. The operationalization of this goal was carried out through international rankings. By decree of the president, by 2020, "at least five universities should have entered the top one hundred of universities in the world." Although that goal initially seemed unattainable, it set a specific vector of development.

Universities were chosen for the program based on the results of competitive selection, which evaluated the universities' development programs, including an identical set of KPIs imposed on all participating universities (see table 10.1). The programs described the main strategic tools with which the plans would be implemented—organizational transformations, new management models, the stimulation and improvement of the faculty qualifications, the creation of research centers in key disciplines, and others. The programs were presented in Russian and English, and they were assessed by the International Council, comprised of Russian and international experts. The International Council selected universities that were able to enter the international educational market quickly and become at least minimally visible in it. In 2013, the first wave of the competition included fifteen universities, seven of which were located in Moscow or St. Petersburg. Fourteen of the universities already had the status of national research or federal universities. In 2015, under increasing political pressure, a second round of the

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Table 10.1
KPIs of universities in Project 5–100

Number	Indicator
1	University position in the ARWU, THE, and QS World University Rankings
2	Number of articles in academic journals indexed in WOS/Scopus databases, per 100 academic staff
3	The number of citations in journals indexed in the WOS/Scopus databases, per 100 academic staff
4	Share of the number of foreign academic staff in the total number of academic staff
5	The proportion of foreign students (reduced contingent) enrolled in undergraduate, master's and graduate programs to the total number of students (reduced contingent) of these programs
6	Average Unified State Exam score of students admitted to full-time courses on state-funded bachelor's and master's programs
7	Share of university revenues from extrabudgetary sources

Source: List of requirements for reports on the action plans implementation by the leading universities of the Russian Federation (approved by the Deputy Minister of Education and Science, February 24, 2014, No. AP-166/02).

competition was held, and six more universities joined the program. In all respects, these universities were weaker than the universities that were initially selected for the program.

Technical universities were overrepresented in Project 5–100 due to a historical bias. Several strong universities in this segment survived the Soviet era and continued their strong tradition of scientific research, received resources for this, and in the modern period were participants in various state development programs, including having the status of national research universities. As a result, only one social and economic institution entered Project 5–100—HSE University (which significantly expanded its range of faculties during the program and became a fully comprehensive university).

The program did not include Moscow State University or St. Petersburg State University. These are financed separately from other HE institutions and have their own development programs. The inclusion of these universities in Project 5–100 and the large gap between their development as research universities, and other universities could have influenced the development of the latter and on the group dynamics of 5–100 universities as a whole. In addition, the "political" status of Moscow State University and St. Petersburg State University would create difficulties about considering them as ordinary participants in Project 5–100 and confusion or embarrassment if they were not recognized as the best during the assessments. On the other hand, for the development of

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these universities themselves, being in a competitive environment with others could have been beneficial.

Assessment

The program was built around the annual assessment of the universities in seven key areas (table 10.1). These indicators evaluated the scientific and educational activities of the university, measuring their quantitative characteristics, quality, and degree of internationalization.

The target of the program was the Western research university model. However, during the first three years, the research university was perceived by most universities as something vague and not associated with some clear characteristics of quality, excellence, or policies to be implemented to reach them—for example, there were no tools for recruiting high-performing faculty, assigning a special role to graduate and master's programs, or encouraging flexibility in teaching—all of which began later.

The division into components, policies, and mechanisms was based on the structure of the international rankings of universities. The management of the program looked at it like this: there are global university rankings, and the main concern is to figure out how to enter them. To do this, you need to carefully look at the components and methodology of the rankings: reputation, research, publication activity, the percentage of international students, and resources. As a result, a matching set of indicators was formed, which was key for assessing the performance of Russian universities.

The quantitative nature of the indicators and the fact that the results were assessed annually inevitably led to various efforts (including questionable ones) to reach these formal numbers at the expense of real changes by a number of universities. Although such effects persisted throughout the entire program, the effects of direct imitation were characteristic of the first stage of its implementation.

Project 5–100 Management

The management of the program was represented by the headquarters group, which included the minister of education and science, Dmitry Livanov, and several other experts, mainly employees of the ministry. This group made key strategic decisions.

In 2014, on the initiative of the universities themselves, the Global Universities Association (GUA) was created, which included all universities participating in the program. It was headed by the rector of HSE University, one of the leaders of the program. GUA contributed to the dissemination of best practices from the leaders of the program to the other participants, and also helped

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the wider ideological and political recognition of the goals and objectives of Project 5–100. As a result, the project management consisted of an administrative ministerial group and a professional group represented by GUA.

The International Council played an equally important role in the program. Headed by the minister, it included six international and six Russian members. In particular, it carried out the annual assessments of the universities on the basis of reports with all the formal indicators, a description of how these were achieved, and short presentations from universities. The presentations and the subsequent question-and-answer sessions showed council members the university's strategic vision and plans for its implementation.

The International Council was an independent institution, a supra-branch body, subordinate to the government but not part of the Ministry of Education and Science. It included representatives of the world's leading universities—people who had made strategic changes in their universities—and representatives of the ministry. This design relied on external, independent expertise and avoided conflicts of interest.

Initially, the assessment was based on a parity approach to account for measurable quantitative and qualitative parameters (i.e., the weights of formal KPI indicators and of the council's member votes equaled 50 percent each), although the council, especially in the early years of the program, had a decisive influence. Under the leadership of Olga Vasilyeva, who replaced Dmitry Livanov as minister, the ministry began to move toward decreasing—for ideological reasons—the importance of the international factor. The share of the council was reduced to 30 percent, and the numerical parameters began to play a more important role. Although formally, the share of the International Council in the overall assessment was reduced, psychologically it had already become such an important institution for universities that they took the opinion of the members of the council more and more seriously.

The annual presentations to the International Council took place in person: first, the university team presented its results for the year and further strategy, and then answered questions. This was followed by a discussion, including a comparison of what the university said with the data and the opinions of independent experts.

The discussion allowed the council to assess the management potential of the team, give recommendations, and pose questions for reflection; the assessment was not simply a matter of submitting a report. For many university leaders, this was their first experience with the format. Having ten minutes to describe the university's achievements for the year and plans for the future meant that management teams had to clearly formulate their priorities, highlight the most important ones, and present them succinctly.

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Initially, rectors represented universities at the International Council. But over time, it became clear that the discourse should be more open, not ceremonial and formal, so a ban was introduced on rectors' speeches. The universities began to be represented by members of the university's management team. Over the years, the composition of speakers evolved markedly in terms of the gender and age balance. Some universities began to involve governors and regional authorities in the submission of their annual reports. In a number of cases, regional authorities made significant contributions to the development of universities, and during the implementation of Project 5–100, this intensified. Although some meetings of the International Council were held in Moscow, regional centers where one or more universities participated in the project also hosted meetings. The meetings were held in Tomsk, Kaliningrad, and Yekaterinburg, which made it possible for council members (especially international ones) to get better acquainted with the regional context of Russian HE.

Unlike other programs, Project 5–100 was based on the principle that the status of leading universities must be confirmed annually (although it was hard to assume that any substantial results would happen within a single year). This is how the idea arose to rank universities in three groups and differentiate funding according to this rank. Based on the results of the annual assessment, the universities were allocated funds for the following year. The top-performing universities received the maximum funding, and the third group received the minimum (about seven times less than that received by the leaders).

An average of 10 billion RUB (430 million USD) was distributed among the universities: universities of different groups in the last years of Project 5–100 received, respectively, 850, 450, and 130 million RUB (36.4, 19.3, and 5.6 million USD). The existence of three groups reflected the heterogeneity of participating universities in terms of their current states and capacities. Such a short horizon and the high degree of uncertainty associated with further funding encouraged universities to take decisive action and to identify quick solutions, but it did not allow investment in long-term initiatives. For example, with an impressive quantitative growth of publications (as discussed next), among universities participating in Project 5–100, only a very few belonged to 1 percent of the highly cited papers. For 2016–2020, the leading universities in this indicator had 123, 117, and 102 publications, respectively, and most of these were publications in megascience projects related to the Large Hadron Collider. Due mainly to megacollaborative work, indicators were formed (at the level of 70–80 publications over five years) for the next few universities. In comparison, for the four top universities worldwide (Harvard University, Stanford University, University College London, and the Free University of Berlin), the indicators in 2021 were 5,510, 2,528, 2,076, and 829, respectively.

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Universities were also limited in their ability to take on long-term debt, focusing on the funds of Project 5–100. For example, using these funds to conclude long-term (or permanent) contracts with faculty and researchers was almost impossible. Instead, universities focused on the short-term recruitment of established, highly productive researchers whose performance was guaranteed to rapidly boost the university's publication performance.

Project Support

During Project 5–100, it became clear that for their transformation and development, universities should be considered as separate entities—they have different structures that move at different speeds. Using individual strategies, the universities went through two stages of change: first, extensive growth (increased requirements for staff and departments and the allocation of resources in exchange for increased commitments, without priorities from the top) when universities developed tools for monitoring productivity and stimulating academic staff, such as bonuses for publications. Then it became clear that this phase of growth had limitations. The second stage was the search for plans and models of university transformations. These models also had two stages: first, the search for disciplinary priorities. It became clear that it was necessary to focus on funding particular disciplines and directing resources to where the most advanced teams were working. This is how the idea of Strategic Academic Units (SAU) arose. Each university was asked to identify up to ten areas to which most resources were to be directed. This was unnecessarily complicated to administer—if each university chose 10 SAUs, there would be 210 separate units for management, monitoring, and funding. It was not clear how this would work, so the program management moved away from this idea and continued to fund each university as a whole. Even without SAUs, it was possible to emphasize the strongest parts of the universities.

The failed SAU experiment demonstrated that the structure of department and faculty management is often not capable of project development. Being built around teaching, it sets strict disciplinary autonomy, which creates barriers to interdisciplinary projects. Within universities, it became clear that the allocation of such disciplinary areas in most cases was inappropriate within the existing management structure, which was organized in subordination to the logic of teaching (i.e., by faculty). Then the next phase began—changing the management model to better correspond to the idea of a research university. Many universities began to move to a different structure, enlarging departments, and turning faculties into institutes that unite educational and research departments and deal with complex, often interdisciplinary questions.

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This transition faced some significant problems in specific universities and in the HE system as a whole. First, there was an extremely low level of internationalization at the managerial level. The number of senior managers with experience of working in universities in other countries was negligible, and information about possible alternatives was extremely scarce, and when available, it was mostly theoretical. Accordingly, the use of international experience as a basis for management innovation was severely limited, and this limitation was reinforced by the view that Russian and foreign universities were fundamentally different, which would make foreign best practices unrealistic or ineffective. Second, there is a very limited market for academic senior management in Russia. Over the past few years, there have been some cases of rectors or vice rectors moving from a university in one region to a university in another (related to administrative decisions "from Moscow"), but during Project 5–100, such cases were rare. This caused a slow diffusion of managerial and organizational innovation, which occurred largely through the exchange of best practices within GUA, either on the direct recommendations of the International Council or through the introduction of innovations from the nonacademic environment. The latter are seen as strengthening the tendencies of new managerialism in the academic environment (Yudkevich, Altbach, and Rumbley 2016), which are often negatively perceived by the academic community.

The recognition of the ineffective work of a Project 5–100 university would suggest that an erroneous decision was made by the ministry in choosing the program participants and the inappropriate use of public resources. This explains why none of the universities that were initially accepted to the program were excluded from it, although one university stopped receiving project funding for two years. It was simply easier for the ministry to approve the continuation of a weak-performing university in the program than to admit that the initial decision to include this university into the program was a mistake.

Project 5–100 Effects

We now turn to the main effects of Project 5–100 on several key aspects of university development: research and staff development, financing, governance, and internationalization.

Research and staff development Project 5–100 coincided with general government reforms of the HE sector aimed to improve the efficiency of universities, including their transformation into research-oriented institutions and efforts to improve their research output. This resulted in an increase in publication output and indicators for most Russian universities, but Project 5–100

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universities stand out in terms of the growth rates of publication activity (in absolute and specific indicators) and the qualitative structure of these publications (Matveeva et al. 2021). From 2013 to 2019, the number of publications in Scopus per 100 academic staff members in ordinary universities increased from 4 to 26, while in Project 5–100 universities, this indicator increased from 37 to 155. The situation with citations is similar. The number of citations in Scopus per 100 academic staff members from 2013 to 2019 in ordinary universities increased from 47 to 221, and in Project 5–100 universities, from 201 to 1,687. Today, the share of publications from Project 5–100 universities is more than a third of the total number of Russian publications, and about a third of all citations of Russian research.

These are the numerical indicators of publication activity and, since they were one of the key parameters by which the success of universities was assessed, this left an imprint on how the universities worked. In the professional rhetoric, new terms appeared that have become a familiar part of the vocabulary of university administrators and members of the academic community, such as "publications in Scopus and WOS" and "publications in Q1." Even the term "publication activity" in relation to individuals and organizations appeared only a few years ago.

Despite the impressive results in terms of research and the increase in publications, Project 5–100 as a whole failed to solve the problem of systematically attracting young staff to universities. Although some specific incentives were created at the institutional level, they were not able to change the situation in the system as a whole. The problem of the aging of the academic community in the Russian university system remains. In 2020, for example, the share of faculty over sixty years old was 29 percent, while the share of faculty under thirty was 5 percent only. These figures are the result of the absence of positive dynamics (or, rather, the presence of negative ones) over the past decade. The situation in Project 5–100 universities is less serious. From 2013 to 2019, the share of young staff in Project 5–100 universities decreased from 24 percent to 21 percent, in other universities, this decline was even more noticeable, from 18 percent to 12 percent.[5] There are several reasons for this—first, the lack of tools for attracting and retaining young people, including university graduates; second, the outflow of strong graduates to foreign universities (mainly through postgraduate studies); and third, the noncompetitive remuneration that Russian universities offer to faculty and researchers at the early stages of their careers in comparison with foreign universities and employers in the nonacademic labor market.

Project 5–100 contributed to a decrease in inbreeding in Russian universities, while hiring from within was always a prevalent policy from Soviet times

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(Sivak and Yudkevich 2015). Meanwhile, leading universities in the country got new incentives and instruments to attract high-quality faculty and researchers from other institutions.

Financing From 2013 to 2020, universities participating in Project 5–100 received 80.1 billion RUB (3.4 billion USD)[6] from the federal budget. The amount allocated to each university changed yearly depending on which of the three groups the university fell into according to the International Council ratings. In the course of the project, financial allocations had different significance for individual universities. While for some smaller universities, funding constituted as much as a quarter of the total annual state allocation, for others they constituted less than 5 percent. In 2013 the average share of program money in state funding was 12 percent, while in 2020, it fell to 7 percent.

There were no long-term funding commitments from the state, which would have informed the project of the amount of annual funding; this financial uncertainty was used to create additional incentives for universities to compete with each other. Project 5–100 did not allow venture funding or funds from the market to ensure the financial stability of universities and their development models; however, university revenues from scientific research grew annually (see figure 10.1).

Governance In many countries, research universities have shared governance in contrast to the more administrative-oriented management of teaching

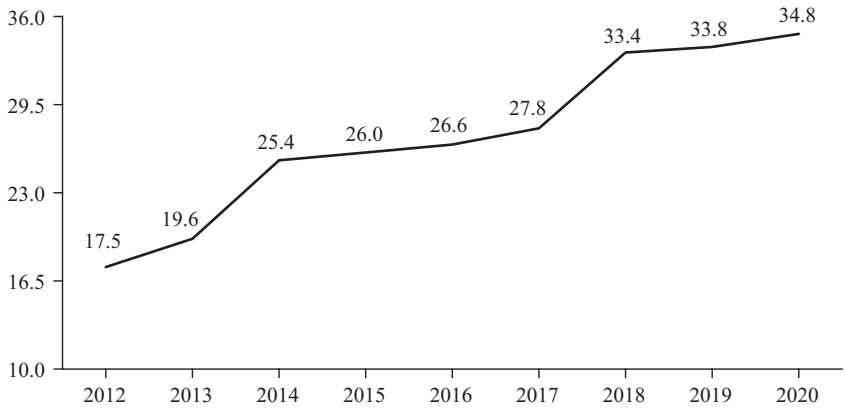

Figure 10.1
Income of Project 5–100 universities from research and development, 2012–2020, in billion RUB. *Source*: Calculated by the authors using data from the monitoring of the effectiveness of universities of the Ministry of Education and Science of Russia 2013–2021.

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universities. In Russian universities over the last decade, we see the opposite trend. At Project 5–100 universities, faculty more often talk about the greater administrative control over their activities and characterize the governance model as administrative, which does not take into account the opinion of the academic community (see Pavlyutkin and Yudkevich 2016; Panova and Yudkevich 2021).

Project 5–100 universities moved from a "process" approach to a "project" approach. While the former was characterized by a focus on key routine processes and providing inputs to ensure their smooth realization, the latter is associated with setting development goals and a focus on measurable outputs to be achieved in a given time and with certain resources. In many cases, this was associated with changes in organizational structures. For example, many universities gave up the chair model for departmental structures of faculties, and created research institutions combining teaching and research activities.

This restructuring took place slowly and not always painlessly (for more details, see Kuzminov and Yudkevich 2022, chapter 8). The position of vice rector for development began to appear in Project 5–100 universities, along with offices involved in project planning and monitoring. These offices were not always engaged in strategic activities; rather, they often focused on bureaucratic activities (collection of reports, monitoring, and other routine tasks). As a significantly greater level of the university's accountability was external, this gave rise to additional reporting channels. A supervisory board, including people external to the university, was established at each university. Although initially such boards only formally approved projects and decisions proposed by the university leadership, in many cases, the councils gradually became involved in discussing strategic issues and making key decisions for universities.

Internationalization Project 5–100 strongly influenced the level and degree of internationalization of participating universities, in relation to students, faculty, and researchers. This can be seen in the numbers of foreigners at universities and in contrast with other Russian universities. From 2013 to 2019, the number of foreign faculty and researchers per Project 5–100 university increased fivefold, from 35 to 169, while at other universities, this indicator remained minimal, increasing from 4 to 5. The share of foreign faculty members, even among Project 5–100 universities, remains extremely low: from 2013 to 2019, it increased from 0.8 percent to only 5.2 percent, but this was still higher than the indicator for other universities, which decreased in relative terms: from 0.5 percent to 0.4 percent. Problems remain in the area of international recruiting, including migration and labor legislation, the complexity of

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the everyday, academic integration of staff who do not speak Russian, and the low level of remuneration (for more about internal and external problems of international academic recruiting, see Yudkevich, Altbach, and Rumbley 2016). A total of 60 percent of foreign teaching staff and 75 percent of holders of PhDs obtained in foreign universities work in Project 5–100 universities.

The same is true for undergraduate and graduate students: today, every fifth foreign student studying in Russia (i.e., 52,000 of 253,000) studies at one of the Project 5–100 universities. In 2013, there were about 1,000 foreign students per Project 5–100 university; in 2019, this figure reached almost 2,500. There was also modest growth in the number of foreign students at other universities: from 160 to 427 students per institution. In terms of foreign graduate students, in 2019 their share in the total number of graduate students was about 15 percent, and in other universities, the number was approximately half that amount. This figure is double that at the beginning of the program. However, the share of foreign undergraduate and postgraduate students remains low in Russian universities (with a large share from countries in the Commonwealth of Independent States), and a significant number of them are concentrated in Project 5–100 universities.

The growth in the number of foreign students was facilitated by restructuring educational programs: running courses and entire programs in English, the possibility of forming individual educational trajectories, introductory programs for applicants to find out more about the university and decide whether to enroll, and orientation programs for those who do. Over the past decade, universities have improved their marketing, including internationally. This is most active in the universities participating in the program. Participation in Project 5–100 also increases international recognition and serves as an external mark of quality for universities, which helps with marketing and working with international audiences.

Project 5–100 led to the growth of internationalization in research activity. The project's universities began to open international laboratories using Project 5–100 funds or the university's own, as part of Project 2020, a competitive program supported by the Ministry of Education (see Kuzminov and Yudkevich 2022) to support international projects and to attract international scientists to lead projects and teams. During the program, the number of publications produced with international coauthorship (i.e., resulting from international collaborations and projects) increased among 5–100 universities.

General impact and reflections While the program was by its very design clearly research-oriented, in terms of student quality, the program also had a significant impact. Today, Project 5–100 universities are the undisputed

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leaders in terms of the quality of admissions. These universities enroll 48 percent of all winners of Russian and International Olympiads. The quality is high not only for state-funded places, but also for paid admission, unlike many other universities.

All these activities were innovative and experimental for many universities and required knowledge and experience. The dissemination of best practices for such innovations was facilitated, as noted here, by GUA. Working groups were created, in which university representatives responsible for the relevant areas looked for optimal solutions together and developed proposals for the regulations or legislation, which were sent to the Ministry of Education and Science.

The impact of Project 5–100 on the Russian HE system is far from limited to changes at participating universities. These universities act as models for other universities and these flow-on effects are most significant in universities located in the same regions as Project 5–100 universities (Lovakov et al. 2021). These universities sought collaborations with leaders (e.g., in the form of mirror labs or joint educational programs) and started introducing some academic instruments to support the best faculty and students. When planning Project 5–100, it was understood that if global research universities appeared, then inevitably other universities would begin to be inspired and guided by them. Even without formal interaction, universities still orient themselves toward each other. Therefore, it is important that world-class universities emerge in Russia to attract the best academics and the best students.

The program did not directly affect the research institutes of the RAS, and it was not supposed to do so. The creation of research universities was carried out in parallel with the continuing autonomy of the academic sector. For the formation of world-class universities, the integration of universities and the RAS would be important; however, the unwillingness of the program participants and the absence of a coherent state policy on this issue blocked this direction. Spontaneous collaboration did take place; during the program, the number of publications that were jointly produced by researchers from universities and RAS, which had always existed, increased markedly (Matveeva and Ferligoj 2020). Universities, attracting productive researchers on a part-time basis, could significantly increase their publication indicators. This opportunity was used by those universities close to RAS institutions, including a number of Moscow universities and Novosibirsk State University, which was originally created to work in close contact with the Siberian branch of RAS.

How can the results of Project 5–100 for participating universities, for the HE system in general, and for society as a whole be categorized? First, the stratification of Russian universities has increased noticeably. A small segment of

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leading universities has formed, differing from other universities in the quality of admission and teaching, as well as the scale and level of research activity. Universities wanted to change, to be internationally visible, to generate more income in Russia, to have foreign students, and to produce honest science—and they achieved all of this as a result of this program. Structural reforms were also carried out, by expansion and by some universities becoming more prominent. In general, universities participating in the program are noticeably larger than the average Russian university; the average state university has 6,400 students, while the average Project 5–100 university has 17,900 students. Today, 13 percent of all students in the country study at a Project 5–100 university.

Further, the set of stakeholders has changed. At first, the main stakeholder in all universities was the Ministry of Science and Higher Education. Only a few universities had key stakeholders from the real sector of the economy (e.g., the state corporation Rosatom for the Moscow Engineering Physics Institute). More recently, and so far in a small group of universities, students and faculty have begun to be seen as stakeholders. The role of regional elites and governors has also expanded. Governors who were members of the supervisory boards of universities became much more aware of what universities can and cannot do. As a result, a number of them began to deal seriously with universities and support them politically and financially. The old form of thinking—that universities are exclusively a federal authority—is being dismantled. Yes, they are mainly funded and managed from Moscow, but Project 5–100 attracted the attention of regional governors and industries that began to see universities as institutions for territorial development.

Finally, Project 5–100 significantly influenced the benchmarks for the education system and for society as a whole. The university hierarchy had been headed by Moscow State University—as the embodiment of tradition and inviolability—now innovation is becoming a key value, and this is embodied in Project 5–100 universities.

The significance of international rankings was exaggerated at the beginning of the program. Making decisions based exclusively on scientometrics and quantitative parameters gave rise to falsifications, fictitious data, and manipulations by some universities, such as the practice of publishing in predatory journals (Savina and Sterligov 2021; Beall 2010; Berger and Cirasella 2015; Eriksson and Helgesson 2017). From the launch of Project 5–100 until 2016, Russia actively increased the share of publications in journals indexed in Scopus: in 2012, only 0.7 percent of the total number of Russian publications were published in Scopus-indexed journals; by 2016, it was 8.4 percent (Savina and Sterligov 2021). At the first stage of Project 5–100 (2013–2016), Russia was in

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the top 15 developing countries with the largest share of such publications, along with Kazakhstan (41.6 percent in 2016), Indonesia (35 percent), Iraq (28.5 percent), and India (15.2 percent) (Marina and Sterligov 2021; Sterligov and Savina 2016). This, however, could not have been avoided, as it was necessary to start the process, see the consequences, and then correct it. In a sense, it was necessary to survive this relapse in the pursuit of accountability.

In addition to attempts at direct falsification, universities took other shortcuts. One of them was focusing exclusively on improving the efficiency of existing processes. This strategy is still maintained by a number of universities, although during Project 5–100, the entire cohort came to understand the difference between change and transformation. By no means has every university taken this on board, but a key group of universities have realized that a fundamental transformation is needed. Another question is whether the university had the managerial courage to make this transformation.

What was the wider community's attitude toward the program? Initially, Project 5–100 did not provoke harsh opposition within the academic community. This began to change when it became clear that not everyone would benefit directly from it. Universities that were not included began to view it negatively. This is a natural process in a competitive environment. Opposition formed among conservatives, who said that Project 5–100 was a threat to "national science," created an "excessive tilt" toward globalization, and was eroding national academic values, impoverishing the national language, and causing a brain drain. This division has always existed historically in Russia, in the form of the Westerner–Slavophile dichotomy.

There was another problem that was not immediately visible. When you start to integrate into the global academic community, you understand who you are in this world. When you are closed and only focused on yourself, you can seem to be the best; when you see yourself from a global perspective, disappointment can result. This sobering realization did not add to the supporters of the project.

Nevertheless, there were those in the conservative wing who, having encountered the program, came to understand the importance of increasing competitiveness and developing universities. Sometimes a university saw itself as an undisputed leader, but in the opinion of the International Council, they were not in the leading group. Therefore, as a self-justification, they looked for flaws in Project 5–100, but not in their own work; however, over time, this feeling passed.

In general, the main counterargument has not changed and is purely political: every region needs a good university. By this logic, it is necessary to allocate money not to the strongest universities at the national level, but to the weakest. In part (though only in part), this thesis was reflected in the principles and design of Project 5–100's successor, Priority 2030.

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Conclusions

Project 5–100: What Worked and What Did Not

The declared goal of the program—getting five universities into the top 100—was not achieved. Among the universities in Project 5–100, not a single one has entered the top 100 universities in the world according to at least one of the rankings. But this goal set the universities on the right path, and they have made significant progress, radically strengthening their positions in subject rankings (see table 10.2).

The methodologies of the ARWU, QS, and THE rankings by subject area are different; however, the subject rankings of all three agencies focus on the same five key subject areas.[7] Russian universities are represented in all subject areas of the rankings, although the largest number of places occupied by universities is in the technical and natural science sections (77 percent, 48 percent, and 72 percent in the ARWU, QS, and THE rankings, respectively). Fewer Russian universities are represented in the social sciences (16 percent, 31 percent, and 17 percent) and the medical sciences (7 percent, 4 percent, and 6 percent).

Universities from the first wave of Project 5–100 demonstrated better results in the international rankings. None of the universities from the second wave made it to the main ARWU ranking, while universities of the first wave achieved this in 2016. In the main QS ranking from 2012 to 2017, there was only one university from the second wave, and since 2018, two more universities of the second wave were included in the ranking. By 2020, of the six

Table 10.2
Dynamics of the representation of universities in subject rankings

	ARWU		QS		THE	
	2016	2020	2016	2020	2016	2020
Number of universities included in subject rankings	1	12	9	15	4	20
Number of places occupied by universities in subject rankings, total	**1**	**37**	**31**	**119**	**4**	**95**
Top 100	0	3	2	12	4	4
101–150	0	4	5	15	0	5
151–250	0	4	6	25	0	10
251+	1	26	18	67	0	76
Number of subject rankings	1	23	14	32	3	11

Source: Compiled by the authors based on data from the official QS World University Rankings, THE World University Rankings, and Academic Ranking of World Universities (ARWU).

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universities in the second wave, only three were in the main QS ranking, while all the universities from the first wave were included. In the main THE ranking, a similar situation was observed—the indexing of universities of the first wave began in 2012, and the first universities of the second wave were included in 2016. By 2020, five out of the six universities of the second wave were included in the main THE ranking, while the all the universities of the first wave were included. The universities of the second wave, which entered the main rankings of QS and THE, in most cases had inferior rankings to the universities of the first wave. Only one university of the second wave managed to noticeably improve its position during the program. In the reporting year, 2020, one of the universities of the second wave did not manage to get into the main section of any of the three rankings.

While taking into account all the major rankings, universities were mostly focused on QS rankings—in particular the QS methodology "reputation" (i.e., there are good chances to improve positions in rankings by working with the expert community for increasing visibility).

What is "beyond the rankings and formal indicators"? An open conversation about the university as a public institution began among politicians and experts. This conversation became possible thanks to the presence of the International Council. An important cultural change took place when the evaluation shifted from a bureaucratic paradigm of indicators, statistics, and reports to talking about the fate of universities at the highest political level. Before Project 5–100, there were many expert and community councils, but they were extremely formal and there was no real discussion. A national academic system began to form—a system of cooperation and interaction between universities, the mobility of academic staff, and shared expertise. The presence of such a system is an important basis for the development of world-class universities in Russia.

What did the program fail to do, and why? First, it was not possible to solve the problem of the rotation of the rectors. Rectorship is a temporary position, and those with the set of competencies critical to the strategic development of educational organizations should be key leaders, but this was such a sensitive issue for universities that it was not implemented. Second, it was not possible to solve the problem of financial reporting according to modern international reporting standards. Only a few universities started experimenting with this. Neither was it possible to solve the problem of data transparency. During Project 5–100, universities bore a significant reporting burden, collected huge amounts of data (on publications, finance, and events), but a significant amount of this information was not verifiable and not fully available to either other participating universities or the professional community. Third, it was not

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possible to abolish the outdated mechanisms of administration and control in universities. Finally, it was not possible to solve the problem of the financing (and the real launch) of advanced institutions within universities that would focus on solving breakthrough interdisciplinary problems.

It was not solely a failure of Project 5–100, since it is a more systemic phenomenon, but this project did not systematically influence the effectiveness of postgraduate studies as a system of training professional academic staff. Today, the number of PhD defenses remains extremely low (average graduation rates with the defense of a thesis is less than 11 percent), and the value of this indicator for the segment of leading universities is not significantly better.

In general, the main shortcomings of Project 5–100 are associated with the limited autonomy of universities, which dates from the emergence of these institutions in Russia 250 years ago, as well as with some structural features of the HE system. However, despite those problems and shortcomings, one can say that Project 5–100 provided value for money and was able to start significant changes within the national HE system. It was important in its own right, but it also served as a first step toward transformation on a bigger scale.

What Is Next? The First Steps of the Priority 2030 Program

Can we talk about the sustainability of the Russian AEI and whether the changes caused by the program (at the national level and at the level of individual universities) are sustainable? First, let us note the program's continuity despite the change in ministers (thanks to the presence of the International Council).[8] Paradoxically, the orientation toward international rankings, despite their nonobviousness as a key target, also served as a safeguard in maintaining the original objectives of the program. This landmark was so clear that it would not have been possible to correct or change it without violating the external commitment laid down in the Presidential Decree. Project 5–100 gave a start to competitive processes within the HE system.

The convergence of the university and academic sectors has now been launched. The program could continue without this convergence, but in the absence of systemic synergy based on clear rules, university development will slow down as science and education are thought about, financed, and regulated in various ways. This could have a particularly negative impact on attracting staff and students and training future academics.

In the fall of 2021, a new program (Priority 2030), announced as a continuation of Project 5–100, started. Although there is some continuity between the two programs, there are also some significant differences. First, the focus of Project 5–100 was on increasing the competitiveness of individual universities, while the new program is focused on the development of the HE system

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as a whole (by transforming a significant number of universities) and on the economic and social development of Russian regions through universities. It is assumed that the program will have a wider coverage of participants (100 universities are receiving a basic grant), including regional universities. This will ensure open entry to and exit from the program. Three dozen of these 100 universities were selected and will receive additional support for their development along one of two tracks. One track is research, aimed at continuing the formation and development of world-class universities. The second track is associated with the development of universities that are systemically important for regions and industries.

The size of the base grant will be about 100 million RUB (4.1 million USD) annually, which is approximately 5 percent of the university's income, which means that for most of the universities participating in the program, such participation is more of a status issue than a financial one. Obtaining the status of "a university from the best 100 universities in the country" (signaling potential applicants and faculty) and creating a commitment to change the university's strategy will be the main factors for universities from this group. Universities included in the narrower group will receive significantly more funding, from 500 million to 1 billion RUB (from 20.7 to 41.3 million USD) annually, and the annual amount of the subsidy will be determined by the results demonstrated by the university. This will make funding variability a powerful incentive for universities to demonstrate rapid and consistent results and will allow them to fit within the budget that the government is allocating for Priority 2030. In fact, the second track reflects the orientation of the program to the formation of not only world-class universities, but also flagship universities, which should become drivers for regional development. There is a substantial emphasis on the practical benefits of universities.

The selection of universities is being carried out based on their development programs, which are based on strategic projects and key policies. Up to five strategic projects are complex projects on priority topics for the development of the university, which are aimed at solving significant challenges and usually interdisciplinary. Key policies are the tools that will drive major systemic change.

The design of the new program also changes the system of KPIs. They do not currently include the position of the university in international rankings or such indicators of internationalization as the proportion of international faculty and students. Changes have been made to the methodology for calculating the remaining indicators; for example, publications are now starting to be tallied with fractional counting. This means that a publication prepared by university staff in collaboration with researchers from other organizations

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(whether Russian or international) will be given less weight. Experts are discussing the possible risks and consequences of this approach, but the designers of Priority 2030 are proclaiming it a departure from the "excessive dominance of formal indicators" and their replacement with more meaningful assessment. It is difficult to say how this will turn out, especially as the requirements for the degree of planning detail are only increasing. The organizers see the digitalization of key processes as an important part of the changes in universities, therefore, the Ministry of Digital Development, Communications, and Mass Media is also participating in the selection and evaluation process.

The previous and new academic excellence programs are inseparable from the sociopolitical context. Today, with the emergence of a greater policy of closeness and reliance on our own national cadres, this cannot but affect both the goal setting and the design of the new program. As a result, the Program Council does not include international experts, and the assessment of applications is carried out by national experts.

The experience of Project 5–100 has shown that such programs have a powerful effect on the structure of the HE. Participation or nonparticipation in the program gives the university a certain place in the system and a certain status, creating opportunities for participants, but also influencing the system as a whole. As Priority 2030 is working with more than 100 universities, not just 21, the landscape of the system will inevitably change. What these changes will be will be revealed only with the course of time.

Notes

1. Calculated based on Web of Science (WOS) data using the InCites analytical tool.

2. Calculated based on *Science and Technology Indicators in the Russian Federation* (2014), p. 91.

3. Calculated based on *Science and Technology Indicators in the Russian Federation* (2014), p. 36.

4. Calculated based on *Monitoring the Effectiveness of Universities* (2021).

5. Here, it is necessary to note the peculiarities of the Russian system of counting "young scientists and faculty": without a postgraduate degree—up to thirty years old, with a PhD—up to thirty-five, with a doctoral degree—up to forty.

6. Calculated on the basis of orders of the government on the approval of the distribution of subsidies for the state support of the leading Russian universities to increase their competitiveness among the world's leading research and educational centers.

7. Natural, technical, social, medical sciences, and humanities.

8. During Project 5–100, the ministers were replaced four times. From 2012 to 2016, Dmitry Livanov held the post of minister of education and science, and Olga Vasilieva did so from 2016 to 2018. In 2018, the Ministry of Education and Science was split into two ministries: the Ministry of Education and the Ministry of Science and Higher Education. The newly formed ministry was headed by Mikhail Kotyukov from 2018 to 2020, and from 2020 to the present by Valery Falkov.

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References

Beall, Jeffrey. 2010. "Predatory" open-access scholarly publishers. *The Charleston Advisor* 11 (4): 10–17.

Berger, Monica, and Jill Cirasella. 2015. Beyond Beall's list: Better understanding predatory publishers. *College and Research Libraries News* 76 (3): 132–135.

Eriksson, Stefan, and Gert Helgesson. 2017. The false academy: Predatory publishing in science and bioethics. *Medicine, Health Care and Philosophy* 20 (2): 163–170.

Kuzminov, Yaroslav, and Maria Yudkevich. 2022. *Higher Education in Russia*. Baltimore: Johns Hopkins University Press.

Lovakov, Andrey, Anna Panova, Ivan Sterligov, and Maria Yudkevich. 2021. Does government support of a few leading universities have a broader impact on the higher education system? Evaluation of the Russian University Excellence Initiative. *Research Evaluation* 1 (16): 240–255.

Marina, Tatiana, and Ivan Sterligov. 2021. Prevalence of potentially predatory publishing in Scopus on the country level. *Scientometrics* 126 (6): 5019–5077.

Matveeva, Nataliya, and Anuška Ferligoj. 2020. Scientific collaboration in Russian universities before and after the excellence initiative Project 5–100. *Scientometrics* 124 (3): 2383–2407.

Matveeva, Nataliya, Ivan Sterligov, and Maria Yudkevich. 2021. The effect of Russian University Excellence Initiative on publications and collaboration patterns. *Journal of Informetrics* 15 (1): 101110.

Monitoring the Effectiveness of Universities. 2021. March 7, 2022. https://monitoring.miccedu.ru/?m=vpo&year=2021 (in Russian).

Panova, Anna, and Maria Yudkevich. 2021. *Governance in Russian Universities*. Unpublished.

Pavlyutkin, Ivan, and Maria Yudkevich. 2016. The impact of university academic culture and leadership on the symptoms of "Global Ranking Fever": The case of one Russian university in a particular institutional context. In *Higher Education Research in the 21st Century Series Vol. 9: Global Challenges, National Initiatives, and Institutional Responses*, 187–204. Boston: Sense Publishers.

Savina, Tatiana, and Ivan Sterligov. 2021. Prevalence of potentially predatory publishing in Scopus on the country level. *Scientometrics* 126 (6): 5019–5077.

Science and Technology Indicators in the Russian Federation: Data Book. 2014. Moscow: National Research University Higher School of Economics.

Sivak, Elizaveta, and Maria Yudkevich. 2015. Academic immobility and inbreeding in Russian Universities. In *Academic Inbreeding and Mobility in Higher Education*, edited by Maria Yudkevich, Philip G. Altbach, and Laura E. Rumbley, 130–155. London: Palgrave Macmillan.

Sterligov, Ivan, and Tatiana Savina. 2016. Riding with the metric tide: "Predatory" journals in Scopus. *Higher Education in Russia and Beyond* 1 (7): 9–12.

Yudkevich, Maria, Philip Altbach, and Laura Rumbley, eds. 2016. *International faculty in higher education: Comparative perspectives on recruitment, integration, and impact*. New York: Routledge.

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11

The Transformative Impact of Academic Excellence Initiatives: What Have We Learned?

Jamil Salmi, Philip G. Altbach, and Maria Yudkevich

Introduction

In the thousand-year history of universities, the last two decades represent a very small period of time. And yet the world of higher education (HE) has witnessed major disruptions in recent times, even discounting the massive switch to online education occasioned by the COVID-19 pandemic. The globalization of HE has brought major challenges, notably increased competition for talent represented by faculty and students, and has created a demand for internationally recognized measures of university performance. This explains the emergence of global university rankings, starting with the Shanghai Academic Ranking of World Universities (ARWU), first published in 2003 (Yudkevich, Altbach, and Rumbley 2016). Indeed, international league tables have profoundly shaken HE systems all over the planet, inducing many university leaders to join the global prestige race and pressuring policymakers to launch new national programs, such as the academic excellence initiatives (AEIs) analyzed in this book. The core of AEIs worldwide is the infusion of additional funds—sometimes quite significant amounts—to enhance research and competitively choose the academic institutions that receive these funds.

AEIs are far from being the first instance of large-scale government commitments in support of university-based research. Efforts to develop the national research capacity started in the US right at the end of World War II, after the publication of "Science—the Endless Frontier," written by President Franklin Delano Roosevelt's chief scientist, Vannevar Bush (1945). While Bush prepared the report with his country in mind (it was one of the triggers behind the creation of the National Science Foundation a few years later, in 1950), other nations heeded the call to develop their scientific capacity, especially in Western Europe and Southeast Asia. In Eastern Europe, the Cold War boosted the determination of the Soviet Union to become a major scientific power through

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steady investment in science and technology, mainly oriented toward the military-industrial complex.

However, several features make AEIs stand out from regular investment programs to build research capacity. First, they are a relatively recent phenomenon. Except for China, which started on that path in the early 1990s, just a decade after the end of the Cultural Revolution, all the other AEIs were launched in the past fifteen years. Second, AEIs have targeted universities rather than research institutes, even in countries such as France, Germany, and Russia, where a substantial share of scientific research has traditionally been carried out outside the university sector. Third, AEIs broke away from the traditional funding approach in most countries, which supported all public universities equally. One of the basic characteristics of AEIs is their competitive nature, resulting in winners and losers when it comes to accessing the additional funding that is available.

Against this background, this last chapter summarizes the main findings of this book, contrasting common approaches and significant differences across countries, and linking these results to recent developments in other nations. After examining the rationale for launching AEIs, it analyzes the main design features and implementation strategies of AEIs. Finally, the chapter assesses to what extent it is feasible to evaluate the degree of success and impact of AEIs.

The Rationale for Launching AEIs

The AEIs that started before the emergence of global league tables (namely, China in 1995 and South Korea in 1999) had more of an endogenous character, reflecting a long-term strategic concern about economic development and the related need to produce high-level human capital. This provided the main justification for investing heavily in building strong universities. As the concept of the knowledge economy gained traction in the late 1990s and early 2000s after the publication of the *World Development Report* by the World Bank (1999) and the adoption of the Lisbon Agenda in Europe, the important contribution of research-intensive universities in support of innovation and productivity growth became part of the economic development agenda in many countries, as was the case in Malaysia.[1]

In contrast, the second wave of AEIs was induced by external considerations linked to the perception of a competitive disadvantage relative to the more stellar performance of the top US and UK universities, as measured by the global rankings, especially the ARWU. In France, Germany, and Russia, for instance, the poor standing of their top universities was perceived as an unfair

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reflection of the countries' economic and scientific power and the quality of their universities. As reflected in its name (Project 5–100), the Russian AEI explicitly aimed to place five universities in the top 100 by 2020. Similarly, in Southeast Asia, the absence of well-ranked universities from the emerging economies was a strong factor in prompting the development of AEIs. In Japan, the perception of a loss of national competitiveness relative to other countries in the region also played a role.

The second wave happened at a time when the concept of a "world-class university" started to gain traction in the HE sector. It became a catchphrase, not simply used for describing the goal of improving the quality of learning and visibility of research in universities but also, more important, for developing the capacity to compete in the global HE market through the creation of advanced scientific knowledge, patents, and other "knowledge products." With students looking to attend the best possible institution that they can afford, often regardless of national borders, and with governments eager to maximize the returns on their investments in universities, global standing has become an increasingly important concern for institutions around the world and for policymakers, bringing a sense of urgency to the decision of launching AEIs.

Finally, a few comments about the geographical distribution of AEIs are in order. All the case studies included in this book are about countries in only two regions in the world: Europe and East Asia. This reflects the fact that the "world-class university" phenomenon has found little traction in other parts of the world, except perhaps Saudi Arabia in the Gulf region, which has invested large amounts in its university sector but with no clear focus. North American universities have paid scant attention to international league tables, being more focused on national rankings such as those published by *US News and World Report* (in the US) and *Maclean's* (in Canada).

Latin American countries have been very critical of international rankings, perceiving them generally as a new manifestation of US imperialism—notwithstanding the fact that they were started by a Chinese university and two of the main global rankings are managed by British firms. In 2012, a large group of university presidents from all over the region met at the National Autonomous University of Mexico (*Universidad Nacional Autónoma de México*—UNAM) to reaffirm their opposition to what they viewed as an instrument of neoliberal HE policies. They condemned, in particular, the failure of rankings to consider the important contribution that Latin American universities make to nation-building (Ordorika and Lloyd 2015). Ecuador is perhaps the only exception, with its 2014 launch of the Yachay University of Technology as an instrument to pave the way to the future and build a knowledge society, as expressed by President Rafael Correa during the inauguration of the

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new university. The Chilean government did a feasibility study of a possible program to promote the creation of world-class universities in 2013, but no follow-up action was taken.

In Africa, even though a few universities have included "world-class goals" in their mission statements, hardly any governments have specifically defined policies for that purpose (Andoh 2017). In South Africa, the public debate revealed a consensus against playing the rankings game, as explicitly suggested by Adam Habib, the former vice chancellor of Witwatersrand University (Essop 2018). Nigeria is the sole exception on the continent, as the federal government announced a decade ago an initiative to place two universities in the top 200 by 2020. But this policy was short-lived (Hazelkorn and Gibson 2017). In South Asia, India is the only country that launched an AEI when it set up the Institutes of Eminence program in 2016. This initiative was too recent for its results to be included in this book.

The Design and Implementation of AEIs

Shifts in Funding Allocation Models

By offering highly visible new additional resources on a competitive basis, AEIs mark a significant philosophical shift in the funding policies of the participating countries, notably in Europe, where most universities are public institutions. In Denmark, France, Germany, and Russia, for instance, where universities have traditionally been considered equally good in terms of education and research results (at least in theory), the AEIs have meant a shift away from the principle of uniform budget entitlements toward a significant element of competitive, performance-based funding. Even in Asia, where private HE enrolls a large share of students in many countries (sometimes even the large majority, as in Japan, South Korea, and Taiwan), the AEIs have introduced an element of competition in public funding that had been less present before.

Of course, competitive funding existed for the allocation of research grants to individual researchers and research teams in most countries, not only from national research funds, but also with the opportunity of accessing funding at the supraregional level in the case of Europe (e.g., European Research Council grants and the Horizon 2020 program). AEIs represent a major change, however, in that in most cases, entire universities were invited to apply for additional funding on a competitive basis, with no guarantee of success. Table 11.1 shows the degree of selectivity of the nine AEIs and the large range that can be observed across countries. Some of the differences are due partly to the fact that, in some nations (such as China, Russia, South Korea, and Taiwan), many universities are teaching institutions that do not conduct any

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Table 11.1
Proportion of beneficiary universities

Country	Proportion
Japan	1% to 2%, depending on the phase
Russia	4%
Malaysia	5%
France	7%
China	12%
South Korea	35%
Taiwan	36%
Denmark	37%
Germany	41% (first phase), 51% (second phase)

Source: Case studies.

significant research. But they also indicate that some countries, such as China, France, and Russia, want to be more selective in order to allow a small number of universities to emerge as potential world-class institutions. At the other end of the range, Germany, South Korea, and Taiwan appear to have been much less selective.

Malaysia stands out because only one university, Universiti Sains Malaysia in Penang, was selected as a result of the AEI competition. Denmark is a small country with only eight universities, three of which benefited from the AEI. The German AEI was also distinctive, in that it funded three levels of institutional entities: universities, graduate schools within universities, and research clusters (known as "Clusters of Excellence (CoE)") within universities. For the third and latest phase, the federal government dropped the graduate school category but introduced the possibility of partnerships across two or more universities, which led to the successful Berlin alliance application, bringing together the city's top three universities (Free University of Berlin, Humboldt University, and the Berlin Technical University). By contrast to the other AEIs, the Korean version focused exclusively on individual graduate departments rather than whole universities, while the Japanese AEI supported the development of CoE across forty-one universities during the first phase, and then a smaller number of World Premier International Research Centers across ten national universities during the second phase. Thus, it can be seen that there is considerable variation across countries in the design, orientation, and organization of AEIs.

A related, noteworthy feature of the selection process is the delegation of decision-making to groups of independent experts. The most common approach involved a thorough peer-review process to select the best proposals, reflecting

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lessons of international experience that show that competitive funding can greatly stimulate the performance of universities and be a powerful vehicle for transformation and innovation (World Bank 2002).

Another novel element has been the inclusion of international experts in the judging committees in all AEIs, except for China. The foreign members sometimes accounted for the majority in the jury, as in France and Germany. The head of the international jury for the French AEI was the former rector of a major Swiss university, which helped give the process independence, objectivity, and legitimacy. The fact that the first wave of confirmations of beneficiary universities included—surprisingly—just three provincial institutions rather than a single Parisian candidate justified turning to international experts.

The case studies revealed that by and large, AEIs have operated with a fair and transparent selection process, and in several instances, a few beneficiary universities were dropped from the AEI after a few years when they did not perform as expected, as happened in France, Germany, and Russia. In France, where there was a huge political disappointment when the universities of two major cities, Lyon and Toulouse, were not selected, the government fully accepted and respected the recommendations of the international jury. In Russia, the government opted to keep the country's traditional flagship universities, Moscow State University and St. Petersburg State University, officially out of the competition, ostensibly because they had their own individual development programs approved by government, but in reality, the reason was to avoid any possible awkward situations in case those universities did not achieve good results. In Malaysia, after the country's most prestigious institution, Universiti Malaya, was not selected for the APEX program, it convinced the government to consider it as a special case worthy of support, so it received a large grant of 590 million MYR (402.5 million USD) to finance its plan to become a top-ranked university.

Most governments that launched AEIs gradually came to the realization that upgrading research universities was a long-term process that required more than one round of dedicated funding. Except for Denmark and Malaysia, the case studies in this book involved two or more phases, with the longest series of AEIs happening in China, spanning the past three decades, and South Korea, lasting more than twenty years. In the Danish case, the AEI was a one-shot undertaking of relatively small scope that complemented major reforms that had been implemented in previous years to strengthen the entire HE system. In Malaysia, the Accelerated Programme for Excellence (APEX) program was conceived as a complementary initiative implemented in the context of the fifteen-year National Higher Education Strategic Plan (*Pelan Strategik Pendidikan Tinggi Negara,* or PSPTN).

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Resource Mobilization

A feature of all AEIs, not only the instances analyzed in this book, is that the additional resources mobilized to fund them have come exclusively from the public purse, with some innovative features in a few countries. In Germany, for example, the AEI represented a partnership between the federal government and the state governments (*Länder*). Similarly, in the case of the Chinese initiatives (Projects 211 and 985), local governments were involved in equal cofinancing with the national government. The now-defunct Spanish excellence program was to transfer resources to the beneficiary universities in the form of a concessionary government loan.

Perhaps the most original model is the French AEI, where the funding was provided through a large endowment (8.1 billion EUR or 9.5 billion USD) whose yearly yield constitutes the resources allocated to the beneficiary universities that were confirmed by the international jury. This innovative approach offers an element of long-term financial sustainability that is absent from all the other AEIs. Furthermore, the French government explicitly encouraged beneficiary universities to diversify their income sources through partnerships with territorial entities, fundraising from philanthropists and alumni, and the commercialization of technology.

The German federal government adopted a similar approach for the latest phase of its AEI (Universities of Excellence), meaning that, like the French beneficiary universities, the German ones would get the additional AEI funding forever, provided that they were positively evaluated every seven years.

In terms of funding volume, the case studies display large disparities, as illustrated by table 11.2. Even though these numbers must be analyzed carefully because of the differences in total duration of the AEIs, the large amounts involved in most countries show a strong government commitment to contributing significant amounts of additional funding. Denmark and Taiwan are the two outliers, with much smaller sums allocated to the beneficiary universities.

China stands apart in terms of the large proportion of additional resources going to the country's top universities (Beijing, Tsinghua, Fudan, and others) in the context of the successive AEIs. In the case of Taiwan, the relatively high proportion accruing to beneficiary universities (15 percent) reflects the fact that these universities have traditionally received low levels of public funding from an international perspective. Malaysia and Russia have the highest proportion after China. By contrast, even though the amounts are substantial in France, Germany, Japan, and South Korea, they represent a very small proportion of the annual budgets of the beneficiary universities (3 percent or less).

However, looking just at the proportion of annual funding may be misleading. Considering that most university budgets are determined by fixed

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Table 11.2
Level of resources allocated to beneficiary universities

Country	Average PPP USD per university	Proportion of the annual budget
China	325 million	45% (Beijing University) 26% (Tsinghua University)
Denmark	24 million	0.5%
France	671 million	3%
Germany	250 million	3%
Japan	155 million	1%
Malaysia	258 million	9%
Russia	162 million	9%
South Korea	133 million	3%
Taiwan	20 million	15%

Source: Case studies.

recurrent expenditures, such as salaries, administrative expenditures, and costs of running scientific labs, having even only 2 percent or 3 percent of additional resources that the leadership is free to allocate and spend above the normal level of funding can make a substantial difference. Furthermore, in some AEI countries, beneficiary universities have access to other funding lines, and they can also leverage the "excellence" label to increase fundraising from the private sector and local public authorities or to obtain counterpart funding from national research organizations, as has been the case in France and Germany which saw a significant increase in third-party funding.

Finally, it is interesting to note the contrast between Europe and Asia when it comes to including private universities as eligible institutions for AEI funding. In Japan, South Korea, and Taiwan, both public and private universities were eligible to compete, and a significant number of private universities received funding to develop their research capacity as part of an AEI. Germany was the only European country allowing private universities to compete, but only one was successful (in partnership with a public university).

To Merge or Not to Merge

International experience of the establishment of world-class universities reveals three strategies that are not mutually exclusive: creating a new university from scratch, as attempted in Kazakhstan and Hong Kong; upgrading existing universities; and undertaking mergers among two or more HE institutions (Salmi 2009). Some of the AEIs analyzed in this book included clear policy directions and financial incentives to encourage universities to merge, with the idea of building stronger institutions by pooling academic and scientific resources and

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extending disciplinary coverage. In Taiwan, during the first phase of the AEI, the government invited universities to merge as a way of achieving greater research capacity. However, facing strong resistance, the government dropped this requirement during the second phase. In Russia, the mergers preceded the AEI that was launched in 2013. Ten federal universities were created through mergers, more often by force than by offering incentives. In Denmark, similarly, a comprehensive merger process took place in the years prior to the launch to the AEI. Unlike in Russia, however, the process was purely voluntary, but a few financial incentives were involved. While there was no specific policy toward mergers in Germany, one of the beneficiaries of the AEI was the Karlsruhe Institute of Technology, born from the merger of the former University of Karlsruhe and the Karlsruhe Research Center, a national nuclear research institution. China experienced the largest scale of merger, with about 400 mergers involving close to 1,000 HE institutions taking place during the 1990s.

France is perhaps the one country where most mergers took place in the context of AEIs. As a matter of fact, the first three confirmed beneficiaries (Aix-Marseille, Bordeaux, and Strasbourg) were merged universities. In total, half of the twenty universities eventually confirmed by the international jury were the product of a recent merger. Interestingly, these mergers brought only universities together, motivated by the need to create comprehensive universities—rather than institutions with a narrow range of academic disciplines—and to achieve a critical mass for scientific research. There was, however, strong resistance to any merger that could fully integrate a national research institute or a *grande école* into the newly formed universities (as happened in Denmark when Aarhus University incorporated a national research institute specializing in environmental sciences). Instead, to maintain the status quo and preserve the traditionally segmented nature of the national HE system, the French government opted to create a new legal form (called an "experimental entity") that would allow the setup of new umbrella universities as loose partnerships of partially merged universities, professional schools (*grandes écoles*), and independent research institutions. The only exception was the new Gustave Eiffel University, founded in 2020, which fully absorbed a national research organization specializing in transportation and networks (*Institut français des sciences et technologies des transports, de l'aménagement et des réseaux*, or IFSTTAR).

The Push for Internationalization

A common feature of all AEIs has been to support accelerated internationalization to attract top talent and reduce academic inbreeding by offering generous packages and leading-edge scientific facilities to foreign researchers and

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granting scholarships to international graduate students. Beneficiary universities have relied on AEI resources to encourage collaborations with research teams from foreign universities. Some, notably China, France, Germany, and South Korea, have also sought to bring back outstanding academics from the diaspora. Danish, French, and German universities have participated in calls to set up multicountry alliances under the European University Initiative of the European Commission. Japan is perhaps the country that has focused most on the internationalization dimension of its successive AEIs to counter the perceived loss of attraction vis-à-vis foreign students, the limited use of English in teaching and research, and the relatively low level of international research collaborations.

The Results and Impact of AEIs

Measuring the effectiveness and impact of AEIs on beneficiary universities and on the HE systems in which they operate is not an easy task for at least two reasons: time and attribution. First, upgrading a university takes many years, eight to ten at the very least (Salmi 2009). Transforming an entire HE system, especially a large one, may require several decades. Since many excellence initiatives are fairly recent, attempts at measuring success could be premature in many cases. It is unlikely that the scientific production of beneficiary universities could increase significantly within the first few years immediately after the beginning of an AEI. A thorough analysis would therefore require looking at a reasonably large sample of institutions for comparison purposes, either within a given country or across countries, over many years.

The second challenge is related to attribution. Even if a correlation could be identified based on a large sample of institutions, establishing whether and how the AEIs actually caused the observed positive changes would require an in-depth evaluation.

Taking these caveats into consideration, this chapter attempts to assess the results of AEIs in two steps. First, it looks at progress in the ARWU rankings between 2004 and 2021 for the nine countries studied in this book. Second, it summarizes the evidence gathered by each author of the case studies to measure the effectiveness and impact of the AEIs.

Progress in the Global Rankings

Analyzing the ARWU ranking prepared by Shanghai Jiao Tong University is a proxy measure of how research-intensive universities have performed over the past twenty years. The methodology of ARWU has been stable since 2004, thus offering the longest-running set of ranking data (2004–2021) for

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international comparison purposes. Second, ARWU shares with the Leiden ranking the characteristic of working only with objective and transparent indicators that are publicly available. This makes it possible to duplicate and validate their results, unlike other rankings that give substantial weight to subjective reputation surveys. Table 11.3 shows the number of top 100 universities for the nine case study countries, as well as the evolution of the position of the top three universities in each country.

Table 11.3
Evolution of AWRU results of case-study countries

Country	Top 100 Universities in 2004	Top 100 Universities in 2021	Ranking of Top 3 Universities in 2004	Ranking of Top 3 Universities in 2021
China	0	7	202–301	28
			202–301	45
			302–403	52
Denmark	1	2	59	30
			101–152	71
			202–301	151–200
France	4	4	41	13
			48	35
			82	38
Germany	7	4	45	48
			51	52
			64	57
Japan	5	3	14	24
			21	37
			54	84
Malaysia	0	0	Not ranked	301–400
			Not ranked	501–600
			Not ranked	701–800
Russia	1	1	66	97
			302–403	301–400
			Not ranked	501–600
South Korea	0	0	153–201	101–150
			202–301	201–300
			302–403	201–300
Taiwan	0	0	153–201	201–300
			302–403	201–300
			404–502	401–500

Source: Shanghai Ranking, https://www.shanghairanking.com/rankings/arwu/2021.

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China shows the most remarkable rise, from no universities in the top 200 in 2004 to seven institutions among the top 100 in 2021. Denmark now has two universities in the top 100 (from one in 2004), an impressive result for a small country of less than 6 million inhabitants. France has kept the same number of universities, whereas Germany and Japan lost three and two of them, respectively. Russia is stable, with only one university, while neither Malaysia, South Korea nor Taiwan have entered the top 100.

Looking at the three best-performing universities from each of the nine countries, apart from the great results of China, substantial progress can also be seen in Denmark and France. Malaysia's flagship university, Universiti Malaya, has also risen. The position of the German universities has not changed, and progress is hardly visible for South Korea and Taiwan. Moscow State University, the only Russian university in the top 100, fell thirty-one spots. Japan's leading universities also experienced a significant decrease.

Following the evolution of the World-Class University Concentration Index over the years gives a more precise picture of the progress and decline of countries with the most research-intensive universities (figures 11.1 and 11.2). The World-Class University Concentration Index lists the number of universities that each country places among the top 100 globally in the ARWU ranking relative to its population, using the logarithmic value of the population to compensate for large variations in population size (Salmi 2021). The US, the UK,

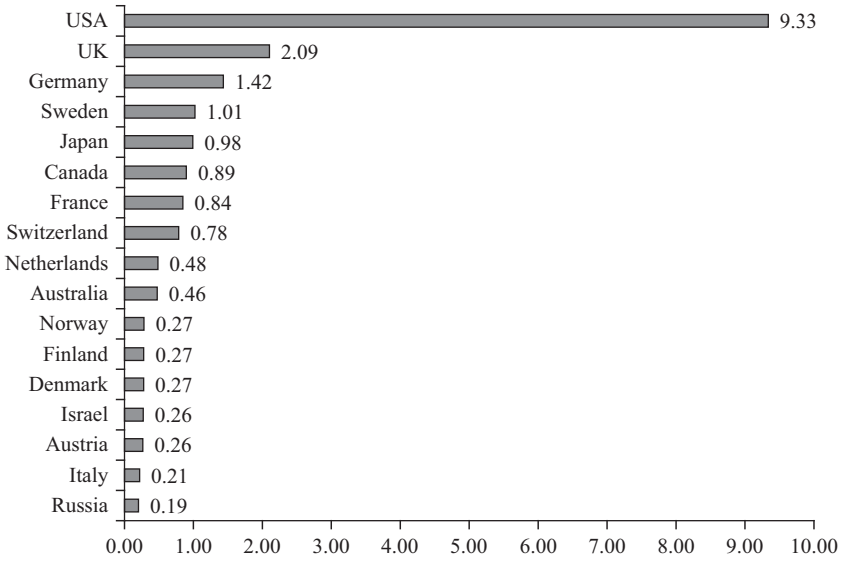

Figure 11.1
World-Class University Concentration Index (2004). *Source*: ARWU and World Population Data.

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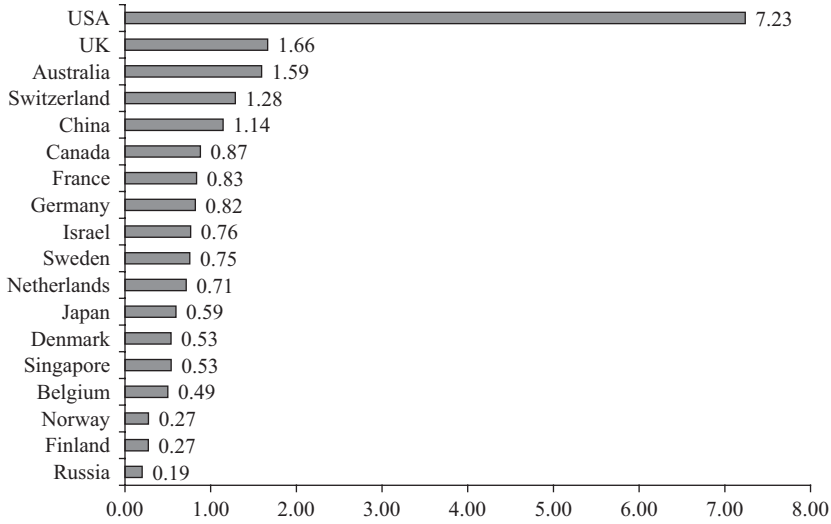

Figure 11.2
World-Class University Concentration Index (2021). *Source*: ARWU and World Population Data

and Japan have fallen significantly. Australia and Switzerland have progressed substantially. China has now the fifth-strongest index value. The other countries showing improved results over the years are Israel, the Netherlands, and Singapore.

Table 11.4 summarizes the results of the comparison between figures 11.1 and 11.2. The most significant change is the huge jump of China and the progress made by small countries. While five of the seven leading countries in 2004 were large (the US, the UK, Japan, Germany, and France), the picture had changed substantially by 2021, with three small-population countries among the top six (Australia, Canada, and Switzerland). Despite three rounds of AEIs, Germany moved down from third to sixth position, and France from fifth to sixth. By contrast, Australia improved in an impressive manner, moving from tenth to third place. The US and the UK lost thirteen universities altogether. Japan moved down from fifth to ninth.

Qualitative Assessment of Success

Table 11.5 summarizes the overall results of the nine AEIs included in this book, as analyzed by the authors of the case studies. While the results appear to be mixed in most cases, the AEIs have definitely brought significant changes in the HE systems studied in this book.

Policy research on the emergence of world-class universities has underlined the importance of the alignment among three sets of critical factors: concentration

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Table 11.4
Comparison of 2004 and 2021 ARWU results

2004			2021		
Country	Number of Universities	Country Rank	Country	Number of Universities	Country Rank
US	51	1	US	40	1
UK	10	2	UK	8	2
Germany	7	3	Australia	7	3
Japan	5	4	**China**	7	3
Sweden	4	5	Switzerland	5	5
Canada	4	5	Canada	4	6
France	4	5	**France**	4	6
Switzerland	3	8	**Germany**	4	6
Netherlands	2	9	Israel	3	9
Australia	2	10	**Japan**	3	9
Norway	1	11	Netherlands	3	9
Finland	1	12	Sweden	3	9
Denmark	1	13	Belgium	2	13
Israel	1	14	**Denmark**	2	13
Austria	1	15	Singapore	2	13
Italy	1	16	Finland	1	16
Russia	1	17	Norway	1	16
–	–	–	**Russia**	1	16

Source: ARWU and World Population Data

Note: The countries in bold are among those whose AEIs are included in this book's case studies.

of talent, abundant resources, and favorable governance (Altbach and Salmi 2011; Salmi 2009). It therefore can be useful to explore the implications of the case studies with respect to these three sets of factors.

Strengthening Talent

The first and perhaps foremost effect of AEIs has been to build a critical mass of outstanding faculty and top students. Beneficiary universities in most countries have made serious efforts to attract highly qualified professors and researchers, often from leading universities in other countries or members of the diaspora. They have also reached out to foreign students and often become more selective in enrollment for master's and PhD programs. The case studies also indicate a trend toward using English more for research and teaching in non-English speaking countries. Significant progress along these lines can be observed as a direct result of AEIs in both Asian and European nations.

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Table 11.5
Qualitative assessment of success of AEIs

Country	Main Objective	Overall Result	Comments
China	Higher-ranking positions, more research production, greater differentiation among universities	Highly positive	Lack of institutional autonomy and academic freedom Slower development of social sciences and humanities
Denmark	Building research excellence and management capacity	Marginal overall Successful in promoting interdisciplinary research	Incentives as part of sectorwide reforms Focus on strengthening university strategic transformation and management capacity Limited time span
France	Scientific excellence and international visibility	Generally successful Stronger research output and increased differentiation among beneficiary universities	Acceleration of governance changes, but enduring cumbersome structures and practices and fragile alliances among universities, *grandes écoles*, and research organizations
Germany	Academic excellence and international competitiveness	Limited change in rankings and scientific output Positive influence on the behavior of the entire university system	More public awareness of performance and the hierarchy of universities Realization of governance limitations Additional financing not very substantial, and may have increased dependence on third-party funding
Japan	World-class universities as recognized by the rankings	Negligible	Lack of consistency and continuity in government policies Reduced funding over time, leading to income diversification efforts, sometimes at the detriment of research excellence
Malaysia	World-class, sustainability-led university	Positive impact on two beneficiary universities	Governance limitations affecting continuity in university leadership Lack of sustainable funding for beneficiary universities
Russia	Five universities in the top 100	Significant progress in subject ranking Limited development of PhD programs	More awareness of transformation strategy requirements Frequent rotation of university rectors Lack of autonomy and outdated management practices

(*continued*)

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Table 11.5
Continued

Country	Main Objective	Overall Result	Comments
South Korea	Emergence of world-class universities	Limited progress in rankings and quality of scientific output Increased number of PhDs Governance reforms and growing internationalization at a few universities	Policy consistency and financing stability over several phases Increased competition for funding and scientific output throughout the system Focus on departments rather than entire universities, undermining strategic transformation
Taiwan	Emergence of world-class universities	Limited progress in rankings and scientific output Positive effort to promote teaching excellence	Lack of continuity in government policies over successive phases

Source: Case studies.

As part of the strategy to build critical mass and attract research stars from other universities, the focus has been on establishing new CoE or strengthening existing ones as a way of starting a virtuous circle along the lines described by the distinguished psychologist Mihaly Csikszentmihalyi (1997, 54–55):

> In the sciences, being at the right university—the one where the most state-of-the-art research is being done in the best-equipped labs by the most visible scientists—is extremely important. George Stigler describes this as a snowballing process, where an outstanding scientist gets funded to do exciting research and attracts other faculty and the best students—until a critical mass is formed that has an irresistible appeal to any young person entering the field.

In this context, many AEIs have encouraged the development of interdisciplinary research through dedicated funding lines, notably in Denmark, France, Germany, and South Korea.

The Weight of Additional Funding

China is in a category of its own, as the scale of investment and interventions is gigantic compared to any other country. The successive AEIs in China stand out as high-impact interventions that have brought huge financial resources that helped the beneficiary universities train large numbers of PhD graduates, set up an impressive scientific infrastructure, and attract growing numbers of star

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researchers. The results speak for themselves: China has become the largest producer of scientific research, overtaking the US and the UK, and its universities have seen the biggest jump in the global rankings.

However, the Chinese case is the exception rather than the rule. In the other countries, even though AEIs were designed as a new type of financial instrument, at the end of the day, the main gain from the viewpoint of the beneficiary universities may not have been the additional resources received, which in many cases did not represent a substantial share of their annual budget. Rather, the beneficiary universities have enjoyed enhanced status in terms of national public recognition and accrued international prestige, translating into greater attractiveness to star researchers and top graduate students, as well as better opportunities to form new partnerships with leading universities in other parts of the world. This has certainly been the case in France, Japan, Malaysia, and Russia.

Adequate Governance

While the AEIs studied in this book have brought additional resources to beneficiary universities, allowing them to strengthen their scientific infrastructure and improve their talent base, the lack of governance reforms to accompany and support efforts toward research excellence appears to be one of the missing elements of AEIs. One of the limiting factors for the Russian AEI has been the rigid control exercised by the central government and lack of institutional autonomy, translating into outdated and cumbersome management practices. In Germany, a healthy debate about structural governance barriers took place in the years preceding the launch of the AEI, leading to governance reforms in a few states. In Denmark, a radical governance reform took place in the early 2000s, giving universities more institutional autonomy and changing the mode of selection of leaders from democratic election to a professional selection process by independent university boards of directors. In Japan and Taiwan, governance reforms to bring more management flexibility to public universities took place a few years before the launch of the first AEI.

In France, the AEI did little to eliminate the segmentation of the HE system. Although the new alliances—Paris-Saclay University and Paris Sciences et Lettres (PSL)—obtained the best ARWU ranking results in 2021, it remains to be seen to what extent these imaginative institutional constructions bringing together universities, professional schools, and national research organizations under an umbrella structure are the fruit of an authentic process of transformation to create strong universities worthy of being among the best in the world, or whether they are artificial arrangements whose main purpose is to achieve a better position in the rankings, knowing that their recognition and

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inclusion in the ARWU rankings succeeded only after strong pressure from the French government. Only time will tell if the bold vision that these new institutional forms represent can effectively result in an integrated university where the election of a new president does not risk jeopardizing the project, where all members of the university community work under a single employer, where all researchers identify primarily with the new university and where the management team exercises real authority in terms of strategy, appointment to key positions, and financial resource allocation. There is still a long way to go to prove that these conglomerate universities can become truly integrated institutions.

In the absence of adequate measures to free public universities from civil service regulations and constraints, some beneficiary universities have created parallel tracks or worked in project mode to provide a positive environment for their star researchers, with state-of-the-art laboratories and US-style doctoral schools operating sometimes in isolation from the rest of the university, which may remain untouched by the changes financed through the AEI.

Another aspect of governance that has not been touched by the AEIs is the mode of selection of university leaders. In countries where university presidents are chosen in a democratic election (e.g., France and Germany), this almost-taboo issue has not been raised officially, even though international experience shows that it can be a serious limitation when it comes to selecting bold and visionary leaders and maintaining leadership continuity for long-term transformation strategies (Salmi 2009). In countries where government directly appoints university presidents/rectors/vice chancellors, as happens in China, Malaysia, and Russia, there is a risk that appointment decisions will be based on political considerations rather than criteria linked to the professional experience and qualifications of the candidates. With both selection methods, there is a risk of frequent rotation of leaders, as revealed by the case studies of France, Germany, Malaysia, and Russia.

And yet the quality of leadership appears to be an essential factor for success. It is interesting to contrast the case of Universiti Malaya, whose vice chancellor generated additional resources and convinced the Malaysian government to provide complementary funding in support of the university's ambitions, and that of the universities in Toulouse and Lyon, which had been selected initially as part of the French AEI but which lost their eligibility because their leaders were not able to rally their university communities around their transformation project.

In any event, one of the positive outcomes of AEIs is that they have allowed a new generation of university leaders to emerge. Regardless of the mode of selection and appointment of university presidents/rectors/vice chancellors,

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successfully upgrading existing universities, which is the goal of AEIs, requires an audacious transformation vision and the capacity to influence the mindset of the academic community in the pursuit of academic excellence.

Besides the degree of alignment among the three sets of factors mentioned in this discussion, another key success factor was policy continuity over time, especially in the countries implementing several phases of AEIs. In many cases, government policies have stayed the course across the successive phases, despite government changes, as happened in France and South Korea. By contrast, the limited impact of the AEI in Japan and Taiwan can be attributed, to a large extent, to the lack of continuity in government policies across the various phases.

Academic freedom is the last governance dimension worth commenting upon because of the tension that may exist between the search for excellence and the constraints imposed as a result of political interference. In nondemocratic nations—China and Russia, for example—it is doubtful that top universities can achieve and maintain outstanding scientific production because academic freedom is restricted. It may be less of a constraint in the hard sciences—although government control of the Internet affects all types of scholars—but it certainly hinders the ability of social scientists to conduct scientific investigations of issues that are politically sensitive. A few years ago, the Chinese minister of education told universities to shun textbooks that promote Western values, indicating that academics should refrain from criticizing the Communist Party (Jing 2015). More recently, during the COVID-19 pandemic, medical researchers involved in scientific collaborations with foreign academics were punished for participating in open science research (Zimmer 2022). There have also been reports of Chinese academics being forbidden to participate in international academic conferences over Zoom (Feng 2022).

In Russia, HE institutions have experienced a rise in attacks on academic freedom in recent years, including the arbitrary removal of university rectors, the arrests of academics and students perceived as political opponents, undue interference with the curriculum and research agenda of universities, and limitations on exchange programs with foreign universities (Melnyk 2022).

System Differentiation and Decentralization

In many cases, the additional funding offered by the AEIs proved to be a powerful incentive to encourage universities to develop a transformational vision, set thematic priorities to guide their search for academic excellence, and elaborate solid projects to implement the vision; however, observers voiced the concern that AEIs could create funding distortions as the leading universities would get an ever-growing share of the overall public budget for HE. Implicit

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behind such views was the fear that top research universities would become eligible for funding privileges while other, less prestigious HE institutions (such as teaching universities and universities of applied sciences) would be relatively underfunded.

The case studies show, however, that that this kind of system differentiation in terms of funding levels has not occurred. In fact, there is evidence of positive spillovers in countries where universities that had unsuccessfully applied for AEI funding did implement their transformation project with their own resources or with third-party funding. This happened in Denmark and Germany and, to a lesser extent, in France and Russia. It is true, though, that in some countries, the prestige effect has led beneficiary universities to form dedicated associations such as the Group of 10 in France and Global Universities Association (GUA) in Russia, setting these universities apart from the others.

A related issue is the geographical distribution of universities and the balance between the capital city and the rest of the country in highly centralized countries. South Korea is perhaps the most extreme case, where two-thirds of the nation's most prestigious universities are concentrated in Seoul. To address this issue, the AEIs had a special preference for regional universities, but this may have undermined efforts to achieve academic excellence by compromising the quality of funding applications. In France, by contrast, quite a few universities outside Paris rose to the occasion, becoming bolder and faster in undertaking transformation efforts to raise the quantity and quality of their scientific production. In Russia, the second wave of university selection strongly favored universities located outside Moscow or St. Petersburg.

Perhaps an unstated goal of AEIs was to strengthen or foster differentiated academic systems, with a limited number of research-intensive universities, a larger group mostly consisting of teaching universities, and other types of postsecondary institutions. In this regard, most of the AEI initiatives may have had some influence, but there is little firm evidence of deliberate policy intentions.

Internationalization

By and large, the AEIs have generated significant improvements in terms of internationalization. This evident in the higher proportions of international graduate students and postdocs, master's and doctoral programs taught in English, the recruitment of foreign academics and researchers from the diaspora, and undertaking collaborative research projects with foreign partners. A side benefit of many beneficiary universities has been a marked reduction in academic inbreeding. In some cases, foreign star professors are given higher

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salaries than local ones, which stimulated recruitment but also created some tension.

In several countries, beneficiary universities have set up International Advisory Councils, first to help them prepare their AEI application (in France, for example), and then to guide them and monitor the progress in implementing their transformation strategy toward academic excellence (e.g., in Russia, where it was part of the AEI design).

Research Versus Teaching

Most AEIs have concentrated almost exclusively on upgrading the research strength of beneficiary universities. The main exception was Taiwan, which established a specific program to improve excellence in teaching alongside its research-focused initiative. The Teaching Excellence Development Program, which was launched in 2005 with an overall budget equivalent to about 650 million USD, aimed at stimulating the modernization of curricular and pedagogical practices in public and private universities. The French and German AEIs both included provisions to promote innovation in teaching and learning along the main research development elements.

Conclusion

Because of economic development concerns and national pride, the performance of universities has entered the public debate in many nations in an unprecedented manner in the past twenty years. The much-advertised results of international league tables and growing interest in the concept of world-class universities have contributed to this evolution. A major priority of governments in a growing number of countries has been to find the most effective method for inducing substantial and rapid progress in their country's top universities. While a few countries, such as Kazakhstan and Saudi Arabia, have opted to establish new universities from scratch, most interested nations have adopted a strategy combining mergers and the upgrading of existing universities. To accelerate the transformation process, about fifteen governments have launched AEIs such as the ones analyzed in this book.

The nine case studies of AEIs show mixed results. While it is undeniable that the leading Chinese universities have made impressive progress as a direct consequence of the successive AEIs, and the French beneficiary universities have shown noteworthy improvements, it is difficult to make an unambiguous assessment for the other case studies.

Looking at the global rankings may not be the most adequate measure of the effectiveness of the AEIs. Benchmarking participatory universities against

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the best universities in the world, or even the top universities in their respective countries, reveals that many beneficiary universities have made significant advances in aligning the three critical framework dimensions mentioned earlier (namely, talent concentration, resource abundance, and adequate governance).

Furthermore, the case studies have revealed a sense of "no turning back" in most of the countries reviewed. The AEIs have created a new dynamic affecting beneficiary universities and nonparticipating institutions. With the increased scrutiny of university performance by governments and society at large, university leadership teams have deployed more efforts to find ways of making their institution more distinctive in terms of research themes, teaching excellence, and linkages with the economy to foster the competitive advantages of their universities nationally and internationally.

Three important observations are in order at the end of this final chapter. First, while recognizing that the global rankings and the AEIs have, to a certain extent, contributed to a higher level of competition among universities nationally and internationally, the virtues of cooperation should not be lost on university leaders and members of the academic community. There is clear evidence that increased collaborations between research teams across universities within the same country or internationally can boost research quality and productivity and lead to academic excellence. Such cooperation is also indispensable to address scientific questions that are of a regional or global nature, such as climate-related phenomena and communicable diseases. Bearing this in mind, Asian universities could consider asking the South-East Asia Ministers of Education Organization (SEAMEO) to emulate the recent European University Initiative, through which the European Commission is supporting multicountry partnerships to enhance university collaborations for the joint delivery of innovative degree programs and cooperative research projects focused on the public good.

The second aspect worth mentioning is the need for a broader definition of academic excellence than the one promoted by AEIs, as suggested by de Maret and Salmi (2018) when they launched the Shanghai Principles in 2017. Instead of focusing narrowly on scientific publications in elite journals such as *Nature* and *Science*, universities that are the recipients of AEI funding should adhere to principles of social inclusion, scientific truth, ethical values, responsible research, and global solidarity as moral pillars of their social commitment, echoing the philosophy of intellectual independence, academic freedom, and institutional autonomy defended by the Magna Charta Universitatum signed in 1988 by 388 heads of European universities. By including a gender equity improvement criterion, the German AEI is the only program that considered

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one of these important social elements. These dimensions may be difficult to measure through the rankings, but they should be seen as fundamental to the mission of world-class universities.

Finally, policymakers should keep in mind that AEIs are not a substitute for meaningful reforms to strengthen the entire HE system. By and large, excellence initiatives principally aim to support the development of research-intensive universities that are likely to become globally competitive. While this is a worthwhile endeavor, it does not exclude introducing systemwide reforms with the aim of enhancing equity and inclusion, promoting innovative educational models, reinforcing quality assurance, ensuring adequate financing, and introducing modern governance. Not only would such reforms also guarantee the sustainability of research-intensive universities, they would also foster the balanced development of the entire HE system. The best systems are not necessarily those that can boast the largest number of highly ranked universities, as they run the risk of experiencing harmful effects in terms of teaching and learning quality because of the research emphasis of most excellence initiatives, the reduced equality of opportunities for students from underprivileged groups as universities become more selective, and diminished institutional diversity as all universities aspire to become research-intensive universities. Governments may want to give less priority to increasing the number of world-class universities and dedicate more efforts to the construction of world-class systems that encompass a wide range of good quality and well-articulated tertiary education institutions with distinctive missions, able to meet collectively the great variety of individual, societal, and national needs that distinguish vibrant economies and healthy societies. Such systems combine global top research universities and locally oriented universities and polytechnics carrying out their teaching and engagement mission to prepare professionals and citizens and to conduct applied research relevant to the development of cities and regions. One would like to think that there is no dichotomy between the research mission almost exclusively stressed by the AEIs and other key missions of universities.

Note

1. The Lisbon Strategy was launched in March 2000 by the European Union (EU) heads of state with the aim to make Europe "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion." European Committee of the Regions, "Econ: Commission for Economic Policy," https://portal.cor.europa.eu/europe2020/Profiles/Pages/TheLisbonStrategyinshort.aspx#:~:text=The%20aim%20of%20the%20Lisbon,jobs%20and%20greater%20social%20cohesion%22.

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References

Altbach, Philip G., and Jamil Salmi, eds. 2011. *The Road to Academic Excellence: The Making of World-Class Research Universities*. Washington, DC: Directions in Development, World Bank.

Andoh, Harris. 2017. Relevance of the world-class university debate for African universities. *Inside Higher Education*, September 24, 2017. https://www.insidehighered.com/blogs/world-view/relevance-world-class-university-debate-african-universities.

Bush, Vannevar. 1945. *Science—The Endless Frontier: A Report to the President by Vannevar Bush, Director of the Office of Scientific Research and Development, July 1945*. Washington, DC: United States Government Printing Office. https://www.nsf.gov/od/lpa/nsf50/vbush1945.htm.

Csikszentmihalyi, Mihaly. 1997. *Creativity: Flow and the Psychology of Discovery and Invention*. New York: HarperCollins.

de Maret, Pierre, and Jamil Salmi. 2018. World-class universities in a post-truth world. In *World-Class Universities: Towards a Global Common Good and Seeking National and Institutional Contributions*, edited by Yan Wu, Qi Wang, and Nian Cai Liu, 70–87. Leiden, Netherlands, and Boston: Brill Sense.

Essop, Ahmed. 2018. South African universities shouldn't be playing the global rankings game. *The Conversation*, October 31, 2018. https://theconversation.com/south-african-universities-shouldnt-be-playing-the-global-rankings-game-105221.

Feng, Emily. 2022. China tightens restrictions and bars scholars from international conferences. *National Public Radio*, March 30, 2022. https://www.npr.org/2022/03/30/1089631713/china-tightens-restrictions-and-bars-scholars-from-international-conferences.

Hazelkorn, Ellen, and Andrew Gibson. 2017. Global science, national research, and the question of university rankings. *Palgrave Communications* 3 (1): 1–11. https://doi.org/10.1057/s41599-017-0011-6.

Jing, Li. 2015. Communist Party orders Marxism course for universities. *South China Morning Post*, January 22, 2015.

Melnyk, Dara. 2022. Russian higher education: The dreadful sound of silence. *University World News*, March 9, 2022. https://www.universityworldnews.com/post.php?story=20220309175130783.

Ordorika, Imanol, and Marion Lloyd. 2015. International rankings and the contest for university hegemony. *Journal of Education Policy* 30 (3): 385–405.

Salmi, Jamil. 2009. *The Challenge of Establishing World-Class Universities*. Washington, DC: Directions in Development, World Bank.

Salmi, Jamil. 2021. Do rankings promote academic excellence? Redefining world-class universities. In *World-Class Universities: Global Trends and Institutional Models*, edited by Nian Cai Liu, Yan Wu, and Qi Wang, 79–112. Boston: Brill.

World Bank. 1999. *World Development Report 1998/1999: Knowledge for Development*. New York: Oxford University Press.

World Bank. 2002. *Constructing Knowledge Societies: New Challenges for Tertiary Education*. Washington, DC: World Bank.

Yudkevich, Maria, Philip G. Altbach, and Laura E. Rumbley, eds. 2016. *The Global Academic Rankings Game: Changing Institutional Policy, Practice, and Academic Life*. New York: Routledge.

Zimmer, Carl. 2022. "He goes where the fire is": A virus hunter in the Wuhan market. *New York Times*, March 21, 2022. https://www.nytimes.com/2022/03/21/health/covid-lab-leak-eddie-holmes.html.

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Denmark

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